SUPPLEMENT TO

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLV. CHICAGO, ILLINOIS, SEPTEMBER 16, 1905. No. 10.

Original Articles

COLOHEPATOPEXY OR COLON SUBSTITUTION.

A NEW OPERATION FOR PERIGASTRIC ADHESIONS AFTER GALLSTONE OPERATIONS.

E. WYLLYS ANDREWS, M.D.
CHICAGO.

All postoperative adhesions after gallstone operations do not cause trouble. In many cases no pain or disturbance results from numerous firm bands uniting stomach, liver and colon. In others there are disturbances of great variety, ranging from slight dragging to severe pyloric compression, torsion of the pars pylorica, hour-glass stomach, dilatation, vomiting, and evidence of outside pressure on the liver ducts, even to the extent of causing jaundice and hepatic colic. There may even be symptoms simulating recurrence of gallstones.

With the increase of gallstone surgery, the disposal of the viscera after operating so as to avoid gastric deformation by adhesions will have to be given much more serious attention, or else a series of operations will have to be performed to relieve deformities almost as distressing as the original disease.

As adhesion building is normal to gallstone surgery, it must be ascribed to luck and accident rather than to forethought that so few of these sequelæ occur.

This risk may be understood more clearly by considering, so to say, the geography and orientation of this corner of the abdomen. There is no part of the cavity which has such invariable boundaries as the gallstone surgical field. Unlike most parts, it is not subject to the floating in or intrusion of other viscera. Its surroundings, to a certain extent, shut it off and prevent it from draining into or out of the rest of the cavity. In form it is a triangle, bounded above by the liver and appendages, below by the colon and mesocolon, and to the left by the stomach, gastrohepatic omentum and duodenum. Of course, the pylorus lies somewhat behind and partly between the colon and the liver. The triangle is a potential cavity only. As soon as retractors are introduced, the triangular form of the space is developed. This space can also be conceived as a spherical triangle, or as a pyramid, with its base on the abdominal wall, and its apex in the foramen of Winslow. The left border of the cavity is made up of the pars pylorica, pylorus, gastrohepatic ligament and duodenum in a line, having its center somewhat immovably fixed by the second portion of the duodenum.

This potential space, which I have ventured to call a "triangle," really becomes such when it has been filled with drainage tubes and gauze strips after operation. It is between the above mentioned organs and seldom any others that postoperative adhesions form. Of course, the mesocolon and the various omenta play an important part by interposing their layers. The greater omentum often rises to help fill this space, and I have sometimes encouraged this tendency by using it to cover the colon and pylorus. Either with or without such interposition, the result of operation and drainage, or of pericystic inflammation alone, is the obliteration of this "triangle." As long as the present methods of operating continue, the occurrence of these adhesions must be expected. It is not clear that it would be desirable to prevent them. They are, in fact, an end to be sought, necessary and life-saving, in all abdominal work not strictly aseptic; the only thing which makes transperitoneal drainage practicable. They are even more life-saving when perforation and pericystitis have occurred without operation, a thing much more common than was formerly recognized.

We, therefore, expect, with or without previous operation, that many cases will show the colon, liver base or edge and stomach end agglutinated into a mass around the gall tracts. It is easy to estimate that in most instances no bad symptoms are caused by these adhesions. Fortunately, most gallstone patients leave us cured. The minority which fail of relief, or are made worse, may be divided into three classes:

1. Those cases in which no stone was found; or, in other words, in which mistakes in diagnosis had been made.

2. Those cases in which some of the stones were overlooked.

3. Those cases, successful in other respects, in which perigastric adhesions and deformity appear to keep up the gastralgia.

This unpleasant minority should be studied carefully from every possible standpoint. In proportion as the adherent masses are deep and posterior, they are less troublesome, since they concern parts normally fixed by omentum and less mobile. In some cases, it is as if the gastrohepatic omentum had merely extended its attachments and been fortified by the gastrocolic or the greater omentum and the mesocolon, which had thrust themselves into the diseased area. The only effect of this is to anchor the first portion of the duodenum and colon a little more firmly than usual, while the pars pylorica is still free to rotate as the stomach distends, and no outside pressure is felt on the pyloric ring.

It is far different when the anterior wall or either curvature of the stomach becomes seriously entangled with the gall bladder, liver edge or abdominal wall (Figs. 1 and 2). We can best realize what gastric pain and functional disturbance this can produce by recalling the different anatomic relations of the full and empty stomach, as demonstrated by Symington. The empty

viscus has its right end near the middle line. The distended stomach moves several inches to the right by rotating around the second portion of the duodenum, which has little motion. The pylorus, he shows, moves more than the duodenum, and the pyloric part of the stomach is more movable than either. In other words, the full or dilated stomach rises into the cupola of the diaphragm and then rotates until the pylorus is pushed over against the gall bladder. The pyloric end of the stomach then overlaps the less movable pylorus, forming the so-called antrum pylori of Schaefer and Symington. It finally takes such a position that what was the anterior wall faces, first, outward, then even posteriorly, lying in contact with liver and gall bladder in a wholly new relation. It is when adhesions form in something like this right-sided relation that I have found gastralgia and loss of function curable by operation. On the other hand, when adhesions form chiefly between the colon and gall passages, or liver edge, no matter how dense and wide they are, I have never known of any trouble to result from them.

Lauenstein[1] gives some drawings of these adhesions to several viscera.

Since writing the foregoing I have seen the short but interesting paper of Dr. Robert T. Morris[2] on what he calls "gall spiders" or weblike adhesions around the gall tracts after inflammation, e. g., cholecystitis, gastroduodenitis, diaphragmatic pleurisy, etc. Morris lays stress on the factor of dragging on the great sympathetic ganglia. He also attributes cases of mucous colitis and diarrhea to colon adhesions. He advocates the breaking up of these adhesions and the use of Cargile membrane, or aristol powder, to prevent them from reforming. The paper shows great insight and cleverness in a new direction.

My own conclusions, based on five operations, are rather at variance with this. I have already stated that I regard postoperative and preoperative adhesions as necessary and desirable. In a great number of gall-tract adhesions between liver, colon, gall bladder and duodenum, I do not recall any instance of angulation of the cystic duct or apparent dragging on the sympathetic ganglia, nor any of mucous colitis due to bands. The trouble I have seen has always been from gastric disturbance, and then only when the anterior wall or one border beyond the pylorus became involved.

I also differ entirely with Morris regarding the technic of removing these adhesions. I have no faith at all in Cargile membrane or in aristol to prevent their reforming. There is, in fact, no problem more difficult to me than that of breaking up large adherent areas between liver, colon, stomach and pylorus, and then preventing their reunion.

My own solution is not to try to prevent them, but simply to let them readhere in a more advantageous relation.

In each of the cases given below, the stomach was the organ deformed, and in the same manner each time—by too extensive union to the liver. The problem, on opening the abdomen, was not so much how to release the adhesions as how to prevent their reforming in the same position. While it is true that long bands can be cut and not reunite, flat or broad adherent surfaces must grow firmly together if left in contact. The interposition of anything like foil or membrane will only increase the density of these adhesions, just as gauze packing does.

1. Int. Surg., p. 367.
2. Medical Record, March. 25, 1905.

It is in our power, nevertheless, to rearrange the position of these three movable organs so as to exclude any one of them and to make the union chiefly between the other two. Thus the stomach can be released entirely from the liver false attachment at the expense of the colon, which will then take its place and become adherent to the liver adhesions.

The operation I now practice is precisely this, substitution of the colon for the stomach after the latter has been dissected from the liver, and might be called colohepatopexy or colon substitution. I employ sutures to maintain it in this new and false, though harmless, position. As this technic has been evolved from several tentative efforts, and has worked admirably in curing the stomach distress, I feel like advising it in all similar cases. Doubtless cases of bands or of Morris' "gall spiders" may also be met, and may be treated by simple division, as he suggests. I have not seen many cases except of the stomach type, and in those I do not think anything but colon transposition will give relief.

1. Incision about the middle of the right rectus or nearer the middle line if an old scar is to be avoided. Plenty of room is required.

2. Careful study of the shape, position and mobility of the stomach will disclose in a typical case numerous short bands or a broad connection uniting the liver edge and a large part of the pyloric end of the stomach, as well as the lesser curvature or anterior wall. In Case 3 (Fig. 2), the attachment of about an inch of the greater curvature caused a degree of hour-glass contraction at a point two inches from the pylorus. In the other cases, the union was between broad surfaces from the gall bladder to the middle line.

3. The most careful separation of the liver from the stomach should be made, and, if necessary, the liver tissue rather than the stomach wall cut and lacerated in the dissection. Bleeding can be checked by hot sponges in the usual way if ligatures are not applicable. The pylorus should be examined by invaginating between thumb and forefinger, to demonstrate that gastroenterostomy or pyloroplasty is not needed.

4. It will be found that the separated viscera will fall back into intimate contact, and that there is no safe way of drawing the stomach to the left and anchoring it. The transverse colon is, therefore, pulled up with any loose omentum which is present, and thrust into the space between liver and pylorus. This is not so much of a displacement as might be supposed from a written description. The bowel is not rotated and does not cross over the stomach, but only forces it toward the right. It is practically the same position which the hepatic flexure assumes after gall-tract adhesions in average cases. To hold the colon in this new relation, its omenta are stitched to the gastrohepatic ligament, liver surface, or such adhesions as form the angle between pylorus and liver. With ordinary care, tissue can be found to sew to without endangering the ducts or large vessels of the liver or of the bowel wall. The more loose omentum can be interposed the better. Of course, a colon suspension incidentally is done here, which cures at the same time any prolapse of the stomach which may be present.

In the following cases the patients have been operated on by this method:

CASE 1.—Mrs. H., aged 43, was operted on for gallstones November, 1904, by Dr. McArthur. She was greatly improved as to colic and icterus, but returned for gastric distress, most severe after eating, with some atacks of vomiting and constant sense of weight in epigastrium.

Operation.—Laparotomy, Jan. 18, 1905, showed dense adhesions between the pyloric part of stomach, including about one-third of the lesser curvature and the liver edge for three or four inches. The gall bladder fundus seemed covered by and adherent to the stomach. The liberation of the stomach was somewhat tedious. After drawing it away from the liver it would immediately fall back in contact when released. The colon, which was nearly free, was drawn up and held against the denuded liver surface by three catgut stitches, one of which was deep and included some of the gastrohepatic omentum.

Result.—Complete relief of gastralgia and digestive trouble followed at once, and the patient made a rapid recovery. She has since had no recurrence of gallstone or stomach trouble.

CASE 2.—H. S., male, aged 29.

History.—Three years ago he had a gallstone operation, performed by Dr. Frank T. Andrews. He has remained free from hepatic colic, but gradually has acquired a form of gastric functional disturbance, causing dragging pain, anorexia and pain after eating.

Operation.—The operation, February, 1905, was identical with that in Case 1. Less trouble was found in releasing the adhesions, which were mainly between the anterior and upper border of the stomach and the edge and under surface of the liver. The colon was made to take the place of the stomach by attaching it to the denuded liver.

Result.—Permanent relief followed this interference.

CASE 3.—H. T., male, aged 33.

History.—Dr. Davis referred patient for chronic gastralgia and dragging pain. No splash or typical signs of hour-glass stomach were present. There was absence of organic acid and normal free hydrochloric acid. He never had boring pain, bleeding or hyperacidity. There was no history of cholecystitis. No operation had been performed.

Operation.—On abdominal section the main adhesions were found between the upper border of the stomach and liver border for about three inches. The greater curvature was also attached by a band at one point about three inches from the pylorus, and thus looped up, constricting the stomach at that point. The colon substitution was performed February, 1905, and the patient had entire relief as long as he was under observation.

CASE 4.—Mrs. T. O., aged 57.

History.—The patient has had numerous attacks of cholecystitis, with sepsis, during two years; no jaundice or true colic. There has been some constant pain in the gall-bladder region and in the right shoulder. I removed the gall bladder, which was greatly enlarged, November, 1903, finding no stones. Periodically since then and for the past six months constantly there has been dragging pain, anorexia and occasional vomiting.

Operation.—Operation showed pylorus immovably fixed to liver, gall tracts and colon by firm union of flat surfaces, but no long bands which could be cut. After stripping and dividing these adhesions, the pylorus and stomach were pushed well to the left, and the colon lifted up and anchored between them and the liver by its omenta.

Result.—Immediate relief was obtained, which continued for the three weeks she remained in the hospital. I have not had a report since.

CASE 5.—Mrs. O. D., aged 36.

History.—Two years previously she had an operation for pelvic disease, appendix removal and gallstones at one time, by Dr. Graham at the Presbyterian Hospital. One year later she began to have pain in epigastrium, generally after eating. She would vomit partly digested food. There was no blood or bile in vomitus. She had acid eructations and some pain radiating to the right shoulder blade. Drugs, lavage and diet regulation gave slight relief. There has been, since first operation, no icterus or biliary colic, and no tumor or soreness over the gall bladder.

Operation.—May 30, 1905. An incision was made through the old scar, the usual gall-bladder incision, about four inches long. The omentum was adherent all along the old scar; the adhesions were quite firm and dense all through the right hypochondriac region and around the gall bladder, and extended posteriorly along the ducts. One distinct rope-like adhesion, which was very firm, drew the anterior stomach well over to the gall bladder and upward toward the liver. This adhesion twisted the pyloric end of the stomach and the organ was dilated considerable; palpation showed no pyloric obstruction. The gall bladder had been sutured to the peritoneum in the previous operation. It was hour glass in shape and contained three stones the size of a pea. The coats of the viscus were slightly thickened and inflamed.

Technic: Adhesions were broken up or ligated and cut, the rope-like adhesion drawing the stomach to the right was freed. The gall bladder was opened and the stones removed. They were soft like putty. To prevent the stomach from again becoming adherent to the gall bladder the transverse colon was drawn up (the stomach being pushed to the left), and sutured between the gall bladder and stomach under the liver. Three catgut sutures were used. Omentum was also spread over the old adhesions and the abdomen closed in the usual manner. A Mayo drainage tube was put in the gall bladder with pursestring suture of catgut.

Result.—A marked relief from vomiting and stomach distress was obtained at once. The patient on one or two occasions had vomited after improper eating without permission, but is quite relieved of the old distress.

In all these cases, gastric lavage was first tried ineffectively. The symptomatology was fairly distinct, because of the history of gall-tract inflammation or of operation, the prominence of pain, and dragging sensation, and the absence of hyperacidity or signs of pyloric obstruction. I debated the propriety of gastroenterostomy as a remedial measure in each of them. It is possible that such a drainage would have done good, but probably less good than the method used.

CONCLUSIONS.

1. Gall-tract adhesions are inevitable after disease and operation.
2. They are beneficent, harmless and symptomless in all but a few cases.
3. These few represent malposition rather than trouble from adhesions *per se*.
4. The colon, gall bladder, duodenum and pylorus can adhere to each other without impairing their function. The other parts of the stomach cause trouble if involved.
5. Such adhesions will reform when separated, unless the colon be substituted for the stomach.
6. The causing of colon adhesion to the liver does not disturb its function perceptibly.
7. Probably certain vague gastric disturbances have been treated by gastroenterostomy when the patients would have had more benefit from this operation.

THE TREATMENT OF EMPYEMATA OF THE MAXILLARY SINUS THROUGH THE NOSE.*

GEORGE L. RICHARDS, M.D.
Otologist and Laryngologist Fall River Union Hospital.
FALL RIVER, MASS.

The questions of etiology and differential diagnosis are considered in this paper only so far as they have direct bearing on the proper treatment.

ETIOLOGY.

Empyemata of the antrum may be divided etiologically into two classes.

In the first class are those cases which originate in diseased processes in the tooth roots or which occur in

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

connection with and as a result of pathologic processes around the tooth roots and are said to be as a whole cases of dental origin.

In the second class of cases, which increasing experience is showing us to be much the larger of the two, are those empyemata of the antrum due to nasal conditions. The epidemic form of influenza known as grip, is by far the most common cause of the acute empyemata, whereas old, long-continued inflammations, ethmoidal or frontal, or any other nasal cause which interferes with the natural drainage of the antrum through its natural or acccessory openings, are responsible for the chronic cases.

DIAGNOSIS.

This must be made with reference to the etiology, as far as it can be determined. Exploratory puncture with the trocar beneath the inferior turbinate is the simplest method of determining the presence or absence of pus. A study of the nasal conditions and a study of the tooth conditions will usually determine which factor is the one at fault. It will often be found advantageous in cases of doubt to have a consultation with a dentist.

TREATMENT.

Originally, nearly all antral empyemata were drained through a tooth socket and the entire after treatment kept up through the opening which resulted from the extraction of the tooth, with the result that many patients were compelled to wear tubes of various sorts, rubber, gold or silver, for varying lengths of time, weeks, months or even years. As this treatment failed in a large majority of instances, the next operation which came into vogue was the more radical one of opening through the canine fossa, removal of the mucous membrane of the antrum with thorough inspection of the cavity, accompanied with a counter opening into the nose and the immediate or subsequent closure of the canine fossa opening. This procedure effects cures but in many instances is probably a more extensive operation than is absolutely necessary.

In recent years, many rhinologists, finding that the washing out after exploratory puncture underneath the inferior turbinate, when continued for a certain length of time, not infrequently effected cures, especially in acute cases, have been led to study more thoroughly the possibilities of treatment of these empyemata by purely nasal methods. Among these rhinologists are Freeman of Philadelphia, who published some years ago an important article on the treatment of these empyemata and introduced a trocar and canula; the chairman of this section, Dr. Myles, who has a trocar and canula for perforating the antral wall; Mikulicz, Curtis, Claoue, and the secretary of this Section, Dr. Freer. I have been using this method for several years, having been led thereto as a result of trying Dr. Freeman's method some years ago, which, though imperfect as to its instruments, was still a step in the right direction.

There is a large class of cases of empyemata of the antrum in which the antrum is merely acting as a reservoir for pus and in which the antral mucous membrane is not of itself particularly degenerated. Such cases are especially adapted to treatment through the nose, which is the natural drainage point of the antrum. The mouth is an abnormal drainage point, and any opening from the antrum into the mouth is in constant danger of being infected from the mouth, no matter how thoroughly clean it may be at the time of operation. Whenever it is necessary to make such an opening, as in cases of simple empyemata of dental origin or after the radical operation through the canine fossa, an endeavor should be made to close it as soon as possible and permanently to separate the cavity of the antrum from the cavity of the mouth.

In the presence of antral disease the course of procedure should be somewhat as follows: If the infection is of dental origin the tooth should be extracted and the infection treated. The opening should be allowed to close as soon as possible. In the presence of symptoms not suggestive of dental trouble or when in doubt as to the origin of the antral disease, an exploratory puncture should be made high up underneath the inferior turbinate at the junction of its middle and anterior thirds or over the inferior turbinate near the natural orifice of the maxillary sinus. A curved canula, with or without trocar answers very well for puncture underneath. The only point to be especially noted is the exact point at which to enter the trocar. In ordinary shaped faces the junction of the anterior and middle thirds of the inferior turbinate answers very well. In patients in whom the malar bone is set rather far back on the face and the nose is relatively long, one should go a little further back, as otherwise there is some danger of perforating a little too far forward and even of entering the cheek. The right-angled, sharp trocar needle of Killian does very well to make an opening for diagnostic purposes. It is entered in the middle meatus just above the line of the inferior turbinate, where the bone is usually very thin. I generally use a stout, bevel-edged needle trocar, or that of Killian. The antrum is then washed out. The next step in the treatment is to continue this washing out of the antrum for a few days and see if it will not be sufficient to effect a cure. The opening can be readily found with a curved Eustachian catheter slightly smaller than the caliber of the trocar canula, or the same instrument can be introduced each time the antrum is washed out. The pain of this procedure is very little when a 20 per cent. solution of cocain combined with adrenalin is used.

If discharge of pus still continues, simple washing through the small opening will probably be insufficient. A probe passed through the opening will give some information as to the character of the antrum. If the cavity seems large and roomy and the mucous membrane does not feel particularly boggy, the presumption is that a cure may be obtained by simple washing. If at the end of a longer or shorter time, a week or more, the simple washing is followed every day by discharge of pus, not diminishing much in quantity, it becomes evident that better drainage must be obtained. The next point is to enlarge the opening into the antrum sufficiently so that it will remain open during the required time of treatment. The naso-antral wall is thinnest just above and just below the insertion of the inferior turbinate, while thickest on the absolute floor of the nose. It is desirable to get the point of drainage at the lowest possible point since in the main the patient maintains the head in the erect posture and the drainage is therefore the better.

The question then arises whether to make it above or below the inferior turbinate or to remove the anterior portion of the inferior turbinate itself. Opinions differ as to which method is the most desirable. Many operators remove a portion of the inferior turbinate. It seems to me, however, that this bone has a valuable function in the nasal economy and that in nearly all instances a sufficiently large opening for drainage can

be obtained underneath or above it without in any way interfering with it unless it be enormously large and swollen. My method of procedure is to introduce through this opening first a curette of about the same size as the opening and then a series of curettes, each a little larger than the one immediately preceding it, until I have a good-sized window into the antrum. As the bone is relatively thin, this can be done without much pain under the influence of 20 per cent. cocain and adrenalin solution, or powdered cocain introduced on the tip of a moist cotton swab. As soon as this window is made, I cut away backward with some form of alligator cutting forceps (I like those of Dr. Myles as well as any, or the bone forceps of Dr. Kerrison), until I have a good-sized opening into the antrum, so large that the largest size Eustachian catheter or other tube can be passed without difficulty. The opening can then be further enlarged so that the cavity can be packed with gauze, and if one has curettes of various sizes with long shanks a good portion of the mucous membrane of the antrum may be curetted.

If unable to work satisfactorily underneath the inferior turbinate, the opening can be made above that bone, and in some instances I think it would be a good plan to have an opening in each place, so as to permit of the best possible drainage. The cavity is then washed out by the physician daily, or as often as may be necessary; intelligent patients can soon be taught to introduce the curved canulæ so as to wash out their own antra.

Should the antrum show evidence of polypoid degeneration, or if the condition does not improve after a reasonable length of time under this method, any nasal operation alone will be insufficient and nothing less than the radical operation through the canine fossa and the removal of the entire mucous membrane of the antrum will bring about a cure. By far the greater number of patients who come under the care of the rhinologist can be treated through the nose.

Should there be at the same time, as I believe is occasionally the case, a tooth the point of which is in the way, I would have the tooth extracted just as if the trouble were absolutely of dental origin; but the after-treatment should be continued through the nose alone, the opening in the alveolar process being allowed to close, as drainage through the nose is so much less disagreeable than through the mouth and the after course of treatment is much shorter.

In regard to the choice of instruments, almost anything that will make an opening through the naso-antral wall will answer. Individual operators have their own choice. Whatever the physician may happen to have in his own armamentarium that will answer the purpose is a sufficiently good instrument. If one is familiar with the drill, either the small drill or the trephin drill described by Dr. Freer, or the instruments of Dr. Wells, of Washington, of which the trocar itself is a reamer, may be used. What is necessary is to make with the least pain to the individual a large opening from the antrum to the nose, as near forward as possible, above or below the inferior turbinate. If it seems desirable, the anterior end of the middle turbinate may be removed, thus making a very large opening, as described by Dr. Freer in his recent article, an opening large enough to drain thoroughly the cavity and to allow the introduction of any therapeutic measure which may be indicated in the individual case.

The choice of remedial agents for washing, etc., I do not take up. The point I am considering is a method of treatment rather than a detail.

The following cases of my own will illustrate the points which I have made:

CASE 1.—Mr. Y., aged 37, complained of catarrh, with some pus discharges for a long time. I made an exploratory puncture under the inferior turbinate and washed out through the canula several times. As the discharge of pus continued, I cut away a portion of the naso-antral wall with cutting forceps, underneath the inferior turbinate. I taught the patient to wash out his own antrum. In a short time he was well.

CASE 2.—Miss H. came to me, complaining of pus in the nose which had lasted for some time. She had a decayed second bicuspid, which was extracted; there was an old inflammation at the root, but it did not penetrate the antrum. The antrum was drilled into from the tooth socket, but this opening closed in two days. At the same time, the exploratory opening from the nose into the antrum was enlarged with curettes and cutting forceps. The antrum was washed out daily, first by me and then by the patient herself. Rapid improvement and cure followed in a few weeks. This opening has remained ever since. I saw the patient thirteen months after the operation, washed out the antrum and found it to be free from trouble.

CASE 3.—Mr. V. came to me, complaining of severe head cold. Simple methods of treatment, with washing out of the nose, were continued for some time without much result. I then punctured first one antrum and then the other, finding pus in each. I washed out the antra through the canula trocar opening without much of any result for about ten days. Then with curettes and cutting forceps I enlarged the opening into each antrum, with prompt improvement in drainage, subsidence of all symptoms and rapid cure. Time required, from two to three weeks.

CASE 4.—Mrs. B. had an attack of the grip, following which she was very weak—confined to bed. There were symptoms of pus absorption. I was called by the attending physician to see if there might not be some trouble with the nose. I made an exploratory puncture and found pus in the antrum on one side. The antrum was washed daily through the small opening for a few days, but with no result. I enlarged the opening with curettes, and daily washing for about three weeks resulted in a perfect cure and subsidence of all the symptoms indicative of pus absorption.

I do not mean to intimate that all cases of empyemata of the antrum can be cured by this method. An attempt to cure in this manner in no way prejudices any further operation, but rather prepares for that and shortens the period of after-treatment. I have had cases,[1] in which the more radical operation has been required, and I expect to have such cases in the future.

CONCLUSIONS.

First determine whether the case is of dental or of nasal origin. If of dental origin, treat it accordingly but do not continue, by tube or otherwise, a long-continued course of treatment through the mouth. If of nasal origin, treat in the manner described. If in doubt, treat through the nose, letting the tooth alone unless it seems to be troublesome. Even this method of treatment do not continue indefinitely if the pus continues to be a source of trouble, but do the radical operation through the canine fossa, a description of which does not come within the province of this paper. Lastly, see whether there is a co-existent empyema of the frontal sinus which may be draining into the antrum and keeping up the discharge of pus.

1. "The Relative Frequency of the Dental and Nasal Origin of Antral Empyemata." Ann. of Otol., Rhin. and Laryn., March, 1905. "The Significance of Pus in the Nose with Special Reference to the Affections of the Accessory Sinuses and Their Proper Treatment," Med. News, Dec. 24, 1904.

Professor Gerber of Königsberg[2] recently published a short but lucid article on the principles of treatment in empyemata of the antrum, which are so in accord with my own experiences in this regard that I wish to translate his conclusions somewhat freely and to incorporate them in this paper. He states that he has tried all the various methods which have been advocated and has finally come to the following conclusions, which will govern him until such time as something better may be brought forward. In dealing with diseased antra of Highmore, the following principles should govern the choice of a method of treatment:

First.—Whenever possible, direct the treatment to the point where the antrum has its natural communication with the nose, and especially avoid any long-continued direct communication with the mouth or pharynx.

Second.—In cases which are not severe, the antrum is washed out in the beginning through a sharp canula introduced in the middle meatus.

Third.—If the empyema has lasted a considerable time and the secretion is thick, with considerable odor, this opening in the middle meatus is next enlarged, the so-called supraturbinal resection of Onodi being performed, to include also the inferior meatus, if it be necessary.

Fourth.—In chronic and severe cases it may be necessary to make a large opening from the canine fossa, the so-called radical operation, but this opening, after thorough inspection and cleaning out of the cavity and the making of a broad counter opening in the middle meatus, is carefully closed and the after-treatment entirely performed through the middle meatus.

Fifth.—The only patients who can not properly be treated in this way are those in whom there is a high degree of nasal stenosis, rendering this treatment impossible, and those who will neither continue in daily communication with the physician nor learn to apply themselves the after-treatment through the nasal fossa.

DISCUSSION.

DR. OTTO T. FREER, Chicago, said that the intranasal operation for empyema of the antrum needs a champion, as most men are in favor of operating by the alveolar route. Dr. Freer thinks that the intranasal operation advocated by Dr. Richards and himself is the most rational one and that it will soon displace all others for the relief of chronic empyema of the maxillary antrum. He said that the trend of late years has been to employ the Caldwell-Luc method of operation through the facial wall of the superior maxillary bone but that this is a far more formidable operation than the intranasal one, as it includes a long incision severing the lip from the alveolar process, an opening in the thick bone of the upper jaw in front, the need of a general anesthetic, and the making of an unnatural opening between the antrum and the oral cavity; besides the usual shock and pain caused by a severe operation. In the majority of cases, he said, the result is no better than that obtained by opening the antrum by the intranasal route, while the latter operation inflicts much less injury on the patient. He agreed with Dr. Richards that the opening through the nasal wall may be made of varying sizes, from a mere puncture with the trocar to the removal of nearly the entire inner wall of the antrum. Dr. Freer's technic includes the use of an electric motor and should this for any reason fail to work, the operator could fall back on Dr. Richard's method, for a combination of the best features of both ways of operating will probably give better results than either alone. Dr. Freer has never seen bad effects from the removal of the inferior turbinated body, though he has often heard them suggested. He has frequently removed the lower one-third of the lower turbinated body and has not encountered the permanent crusting and scabbing supposed often to follow this reduction in size of the turbinal, nor has he encountered rhinitis and pharyngitis as a result, and he does not think that the lower turbinated body is as physiologically important as it is supposed to be. For this reason he does not hesitate to resect its anterior two-thirds in performing a radical opening of the antrum through the nasal wall. Resection of the inferior turbinate is also a part of the Caldwell-Luc method and its followers do not speak of bad results following. The Wells rasp seems to Dr. Freer to be a good instrument, for in ordinary mechanical work he has found that a rasp cuts nearly as well as a saw. When the empyema of the antrum is not yet chronic, and when there is but a moderate purulent or seropurulent discharge, the middle meatus offers sufficient access to the antrum and an opening here may be made with the greatest ease. Onodi enters the antrum in this place with a forceps-trocar, whose blades he spreads to make a preliminary opening. This opening he then enlarges to nearly the size of the meatus.

DR. W. S. BRYANT, New York, stated that he puts most reliance on opening through the middle meatus alone, removing if necessary part of the middle turbinate. He uses a probe to locate the natural opening and follows that with a curette, after which he uses one of the angle punches and takes out as much bone as is necessary. The quantity of bone to be removed is in proportion to the bad condition of the mucous membrane, according to whether the drainage must be absolute or need be only relative. After a sufficient opening is made, washing is unnecessary.

DR. GARDNER PERRY POND, San Francisco, said that he has been very much interested in this subject because of Dr. James G. Sharp's work on the accessory sinuses. Dr. Pond has been an advocate of the nasal route and Dr. Sharp of the canine fossa route. As an argument in favor of his method Dr. Sharp quotes the relative frequency with which a double cell is found—the antrum divided by a thin bony wall. In such cases the cell nearest the nose may be opened with the cannula and the operator may not suspect the existence of the other cell, consequently there will be no relief of the symptoms. If, on the other hand, the antrum be opened through the canine fossa, and the opening be made large enough to admit a finger, it can easily be determined whether or not there are two cells. Dr. Pond stated that there is no doubt in his mind that the best drainage is obtained through the floor of the antrum and said that he can see no reason for choosing the middle meatus as a route for entering that cavity.

DR. L. C. CLINE, Indianapolis, stated that he has had considerable experience in the treatment of these cases, particularly some time ago when there was a great deal of grip in the country. Each case is a law unto itself, and that must be remembered in operating. In the old neglected cases a radical operation is necessary; in the subacute or chronic cases of short duration, recovery will often take place if the opening is made through the alveolar process. Dr. Cline does not believe in cutting away the turbinated body unless it is necessary. Drainage is necessary and to get good drainage the anatomical relations in these cases must be borne in mind. Different skulls show marked variations in the size of the cavities. Dr. Cline has often practiced making an exploratory puncture in order to measure the distances. If the tooth is out—and often it is better that it should be out, because so often it is diseased—then it is easy to make a puncture with a sharp drill. Then he cuts with the burr in various directions. This enables him to examine the cavity for polypoid conditions and to determine whether or not a radical operation is necessary. It is a simple procedure. The field can be cocainized and the work done without general anesthesia. Dr. Cline does not believe in making an opening between the superior and the middle turbinated bodies, because then drainage can be obtained only with difficulty. With good drainage and cleansing, these patients, as a rule, will recover.

DR. C. F. WELTY, San Francisco, declared that these patients can be cured by one of these various procedures, so that the question arises as to which one of the routes shall be selected as the best. This can best be done by studying the individuals. The question naturally arises, which does the least

2. Archiv. für Laryngologie and Rhinologie, vol. xvii, part I.

harm to the patient. Dr. Welty is firmly convinced that least harm is done by the alveolar route. He has never seen any harm follow the removal of the anterior half of the inferior turbinate, however, but his experience, he said, is limited. All the patients he has operated on by that method have recovered completely. When operated on by the alveolar route they have not recovered so readily. Radical procedure cannot be determined on absolutely until some of the more conservative measures have been used and have failed. Sometimes puncture will cure the patients. Dr. Welty has seen a number cured by a single washing out through the inferior meatus. Hajek is a great believer in the alveolar route. About two years ago he began to use the inferior meatus route. Dr. Welty does not know with what ultimate results. The route by the middle meatus should be condemned from its anatomic relation.

DR. W. S. ANDERSON, Detroit, Mich., said that if possible, he should always try to save the inferior turbinated body.

DR. S. L. LEDBETTER, Birmingham, Ala., said that the question arises as to whether a given case is chronic or acute. In all the acute cases, he has found that the patients get well readily after a small puncture and one or two washings. The dentists in his section of the country get the majority of the acute cases; the patients go to them because they have some trouble with the teeth. In the chronic cases, when the lining membrane is diseased and in which there is often a polypoid condition present, recovery may not be secured by simple washings. These patients require the application of some remedy that will destroy the diseased condition of the sinus. This cannot be done without an opening sufficiently large to enable the physician to enter the cavity, which is not always regular and smooth, and to reach all the different portions of that cavity with a probe or applicator. Dr. Ledbetter does not believe that all the points can be reached as readily through the nose as through the canine fossa.

DR. A. G. GREENSTREET, Seattle, Wash., declared that the opening above the inferior turbinated is often referred to, but that very few advocate that route. He saw a case recently in which nature had performed a successful operation by that route. An old man had been suffering for several nights. When he consulted Dr. Greenstreet one side of his nose was full of pus, and in wiping the pus away Dr. Greenstreet got into the antrum above the inferior turbinate. The opening was a large one, so that he could swab the pus out of the antrum. Under antiseptic irrigations the patient was cured up in a short time. It seems to him that in many cases that might be a good route to adopt, for it obviates the necessity of resecting the anterior third of the inferior turbinate body.

DR. DEVILBISS, Toledo, stated that in long standing cases a radical operation is needed. The cases in which the accessory sinuses are involved are those that have tried his soul the most. In acute cases an exploratory puncture for diagnostic purposes, with simple drainage may be all that is necessary, but in those cases that have lasted for a long time, in which there probably is disorganization of the tissue, whether the operation be through the canine fossa or through the inferior meatus, an opening should be made large enough to permit the introduction of the little finger. If the antrum is found to be in fairly good condition in a case of long standing, the physician should look to the sphenoidal sinus, the ethmoid cells and the frontal sinus. He mentioned a case in which Dr. Myles operated through the nose and the patient did well, but Dr. DeVilbiss usually operated through the canine fossa. He elevates the lip and with a hand trephine bores through the canine fossa and then uses a rasp or drill to enlarge the opening.

DR. J. H. MARTINDALE, Los Angeles, said that the views held in the different parts of the country seem to give these cases different interpretations. In Los Angeles he does not have an opportunity to treat acute cases, for in southern California there are few such. The cases he has are chronic cases, and in these cases he prefers to enter through the alveolar region if a tooth is absent or through the canine fossa if a tooth is not absent. He does not object to a permanent opening. The opening should often be large enough to permit the introduction of the little finger. It is of no importance, practically, whether the antrum be converted into a part of the oral cavity, provided it can be thoroughly washed out. The method advocated by Dr. Richards, he said, is probably of very great value in a climate where acute cases occur frequently, or where an exploratory operation may be required.

DR. ROBERT C. MYLES, New York, said that this subject is intensely interesting to him from a purely scientific standpoint, since he has operated in the last fifteen years by every method that has been suggested. He believes that the antrum of Highmore should not be treated after the ordinary rules of surgery. There are thin walls covered by thickened mucosa, and the general surgeon, following the ordinary rules of surgery, would advise curetting thoroughly. Dr. Myles claims that by curetting a worse condition than before is brought about. The normal mucosa is destroyed and part of the periosteum, and there is a large opening into the mouth. A new membrane can not form very soon. If curettement has been as thorough as many writers direct there is practically nothing left. The opening will contract before there is complete obliteration, and all who have tried obliteration of the cavity have abandoned it. A large opening into the nose is frequently made in these cases and the opening in the mouth allowed to close up. So there really is no radical operation. Any operation that leaves a pus cavity in an accessory sinus is not a radical operation. Dr. Myles would endorse the mildest operation that gives the best results, and that operation is a part of the so-called radical operation. The removal of the nasal wall of the inferior meatus is the most essential part of any operation on the antrum of Highmore. He has practically abandoned operating in acute cases because these patients rarely need operation; all they need is an opening to relieve the pressure from the fluid and the gas. Cases frequently become chronic because the pressure is not relieved and sloughing occurs. Dr. Myles presented two small chisels that he has found most satisfactory and simple for opening the antrum.

DR. GEORGE L. RICHARDS said that it seems to him that the dental engine is an instrument that is destined to go out of use rather than to increase in popularity. It is difficult to work in the nose with the large wobbly, flexible shaft. He has used the straight instruments that Dr. Freer describes and the antrum with them can be opened. If an instrument will do the work, the simpler it is the better. Dr. Richards does not recommend the dental engine. Often the operation must be done away from electricity and where it would be difficult to carry a foot-power instrument. He recalled a case in which the patient was nervous and dreaded the coming of a second man who might have surgical propensities. In that case Dr. Richards was able to get into the sinus without the patient hardly knowing that anything but a nasal examination had been done. The instrument that he almost invariably uses for exploratory purposes is a medium sized beveled steel cannula which may be pushed in with the finger or in some cases may require a tap with the mallet. If the gas pressure be gotten rid of the patients often get well of themselves. However that may be, even in the very acute cases a puncture under the inferior turbinate and washing out with some simple antiseptic solution will lessen the severity of the attack. The curved instruments of course go in more easily than the straight ones. Dr. Richards had some difficulty in maintaining the opening, but with the instruments which Dr. Myles has shown he does not anticipate any trouble in the future. With the beveled instruments one does not get out sufficient tissue. Even in the acute cases it may bother the operator to introduce the cannula. In such cases, Dr. Richards simply reintroduces his bevel edge cannula. Opening in the middle meatus, he said, is easier than the puncture under the inferior turbinate. In most instances he has preferred making the opening in the inferior meatus. If the point of opening be selected with reference to the conformity of the face, the operator will find it somewhere between the first and second thirds of the inferior turbinate, carrying the instrument as high up as possible, he will go through a very thin wall. Sometimes it is necessary to go as far back as the sec-

ond third. It must be remembered that at times there may be great variations. An idea of the anatomic construction of the antrum can be obtained by noticing how the teeth grow and by taking note of the palatal arch. Now and then there is an almost complete septa between the antra so that one cavity might be entered and not the other. Dentists must be instructed concerning the nasal side of these cases, and they can instruct physicians as to the dental side. It does not seem to Dr. Richards that the dental route is the better. The patients who may be treated through the alveolar process may be treated better through the nose. An opening through the mouth is abnormal and the alveolar opening always tends to close. The patients treated through the mouth continue coming to the clinic for a long time. He does not think many American patients would care for such an operation. In his district most patients would prefer to have a little purulent discharge through the nose, rather than to have a so-called radical operation. In reply to a question, Dr. Richards stated that the radical internal method is not indicated in cases in which there is mucoid or polypoid degeneration, though it may give a certain amount of preliminary information. As a diagnostic measure the opening can be made through the nose. In acute cases, recovery usually follows the relief of pressure. In cases complicated with empyemata of the ethmoidal cells or of the frontal or of some of the other sinuses, he would make the opening under the inferior turbinate. If the patient seemed to have insufficient drainage, he would enlarge the opening. If the inferior turbinate lies in such a way that it folds right over the antral wall so that sufficient room cannot be obtained, part of it may be taken off. Again, the front end of the inferior turbinate can be taken off. The cases must be individualized. In a case with comparatively smooth walls and comparatively uncomplicated, drainage and washing will usually suffice. It does not matter so much how long these cases have lasted; more depends on the character of the pus and the condition of the mucous membrane. In cases with polypoid masses, it is better to operate through the canine fossa, unless the instruments presented by Dr. Myles will enable the operator to get sufficient drainage in these cases.

DR. OTTO T. FREER, Chicago, said that he thinks that Dr. Richards has been a little unjust to the dental engine. The handpiece may be disinfected and he should not like to give up the use of so valuable an instrument merely because it can not be cleaned like the implements used for a laparotomy. Dr. Freer certainly has never seen sepsis follow his frequent use of the nasal burrs and trephines. The long burr cuts away the strong ridge left at the bottom between the nasal floor and floor of the antrum, after resection of the upper part of the nasal wall of the maxillary sinus, in a way no other implement can, so that the nasal floor shelves down into the antrum and drainage becomes as nearly perfect as possible. The trephine also perforates the nasal wall with great speed in several places and causes practically no pain. After the trephine the burr may be used to enlarge the opening.

METHEMOGLOBIN AS A FACTOR OF CONSERVATIVE METABOLISM.*

BERNARD OETTINGER, M.D.

Neurologist to the Hospital for the City and County of Denver.

DENVER, COLO.

DEFINITIONS.

Hemoglobin (Hb) is a crystallizable body which constitutes the largest portion of the colored corpuscle. It is a respiratory pigment, has the power to attract oxygen and also other gases. (Kirk.)

Hemoglobinemia is a condition in which the hemoglobin is dissolved out of the red corpuscle and is held in solution in the serum. (Gould.)

Oxyhemoglobin (O_2Hb) results when hemoglobin is united molecule for molecule with oxygen. It is the characteristic constituent of the red corpuscle to which the scarlet color of arterial blood is due. (Gould.)

Reduced hemoglobin is the result of deoxidation of oxyhemoglobin. (Gould.)

Methemoglobin (Met Hb) is a modified form of hemoglobin. It is the product either of incomplete decomposition of hemoglobin or of its excessive oxidation. The oxygen is more firmly combined in it than in oxyhemoglobin. (Gould.)

Methemoglobinemia is the presence of free methemoglobin in the blood. (Gould.)[1]

To the physician of to-day, methemoglobin, because it is known to be a more stable oxygen compound than oxyhemoglobin and is capable of reduction by the tissues only in slight degree, is universally regarded as a blood change deleterious to the organism, or, otherwise to express the equivalent, methemoglobinemia is always an intoxication, be it great or little in degree. It is amply proved that if methemoglobin be present in the blood in sufficient amount death results. Nevertheless, I differ from accepted opinion in so far as to say that methemoglobinemia must not be regarded as invariably deleterious to conservative metabolism, and that, in fact, therapy empirically makes use of this blood change to aid in conservation of nutrition. The following is offered in support of this opinion:

The toxicologist, Selmi, used the word ptomain to describe certain alkaloidal bodies formed during the process of animal tissue putrefaction. Herein the name derived from the Greek word signifying cadaver was appropriate enough. Gautier applied the name leucomain, from the Greek term signifying white of egg, to basic substances preformed in the body tissues or which are products of living tissue metabolism. This distinction, it was found, could not stand. Because putrefaction and normal digestion are practically identical processes, we are not surprised that some of the basic substances originally obtained from putrefying animal matter can be isolated from living protoplasm, both animal and vegetable. More than this, enzymes or unorganized ferments and dilute mineral acids are capable, as well as bacteria, of producing ptomains when acting on the nuclein molecule. These facts enable us to draw conclusions from findings in reference to such basic substances without regard to the usual dual classification. Concerning this argument, however, so much may be said as to their differentiation. The interdependent relation, as based on chemic formulæ, of some of these basic substances (leucomains) to others of the same class and their final elimination products, has been identified with successive oxidation and cleavage processes, as, for instance, those of the best known purin group, form a continuous oxidation series with uric acid as the final product from which urea may be attained by cleavage. Much less is known of antecedent and also of oxidized elimination forms of representative ptomains, such as cholin, muscarin, putrescin, etc., although, as a general proposition, the sufficient oxidation of these basic substances is known to render them innocuous. For the same reason, the relation in general between oxidation of metabolic products and pathologic reduction of red cells hereinafter considered, is clearer as regards the leucomains than the ptomains, although a like

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. This definition given because as complete as any attainable, nevertheless does not convey the entire meaning of the term methemoglobinemia as used in this article. In experimentation on animals it has been found that an induced blood change from oxyhemoglobin to methemoglobin, in most cases, if not always, takes place within an intact red cell, disintegration occurring later, and hence we obviously may have a methemoglobinemia before the methemoglobin becomes free and reaches the plasma.

need for the oxidation of the latter remains no less obvious.

As clinicians, we are interested in the connection which retention of these basic substances may have to disease—a factor often recognized, at least, in general terms. C. E. Simon[1] says "both classes of substances (i. e., ptomains and leucomains) are of especial interest to the physician, as their formation or undue accumulation in the body may give rise to serious disturbances." Vaughan and Novy[2] state "the leucomains have been credited by many as playing the chief rôle in autointoxication," and, again, "Wiener's observations on uric acid show that the purin body is not only a nuclein cleavage product, but that it may also be a synthetic one. Furthermore, he has shown that uric acid is not only being made, but is also being constantly destroyed within the body.[3] The process of formation and decomposition results in the normal minimum excretion of uric acid. If, however, the latter change be diminished or inhibited, the amount of uric acid becomes apparently increased and may lead to disease conditions, such as rheumatism. The same view may be extended to the purin bases and the relatively large elimination of these bodies in leukemia may be due not only to increased formation, but also to decreased destruction."

As regards specific blood observations, Prevost and Dumas have noted an accumulation of urea in the blood where it failed of elimination by the kidneys.[4] and, according to Gschleiden, an accumulation likewise occurs in fever. Salomon found uric acid in the blood in demonstrable amounts in cases of pneumonia and fever. von Jaksch obtained blood by cupping from 102 persons, of which only a few were in health, and tested it for uric acid. He detected no uric acid in the blood of the healthy, but found it in varying amounts in the blood of patients who, as a result of heart lesions, of pneumonia, nephritis or anemia, were suffering from dyspnea. The same investigator detected xanthin bases and uric acid in exudates and transudates and also the former in the blood in various pathologic conditions. According to von Limbeck,[5] xanthin bases (i. e., purin bases) have been found in the blood in various diseases by Sherer, Mosler, Salkowski and Salomon. von Jaksch interpreted the accumulation of uric acid in the blood in dyspneic conditions to mean that in these occurred greatly lessened oxidation processes. von Limbeck points out that the error of this conclusion is demonstrated by Kraus, who, by comparative analyses of respired gases in cases of severe anemia as against those of healthy persons, found the coefficient, $\frac{CO^2}{O}$, to be the same in both conditions. In accordance, also, are the observations by Chvostek, Bohland and Biernacki that in simple anemia the patient, instead of using less oxygen, employs rather more than in health. A reasonable conception concerning all blood conditions which have been cited would be the following one, viz., that as a pathologic effect in a great many morbid conditions increased disintegration of tissue cells results in the increased formation of leucomains, the chief known source of which are the nucleins of the nuclei and the proteids of cell protoplasm. Also, it being established that progressive oxidation and subsequent cleavage advances the leucomains to a product suitable for body elimination or one required for further metabolism, *dyspneic conditions (without regard to clinical entity but merely as one sign of intoxication), are always manifestation of an inadequate effort on the part of the organism sufficiently to oxidize these cell disintegration products.* Or, to express the idea from a different view-point, *there is in the blood in conditions which result in increased tissue metabolism an accumulation of basic products which are prepared for further use or for body elimination by oxidation and cleavage processes, and, therefore, the same products up to the point of their sufficient preparation act as powerful reducing agents or deoxidizers.*

To one who approaches the subject without prejudice, the literature of methemoglobinemia develops some unconvincing conclusions as well as patent contradictions. He must be impressed by the fact that substances so far removed from others classed with them in physiologic effect or manner of therapeutic use as are hydrocyanic acid, amyl nitrite, iodin, turpentine, pyridin, chloroform, ether, chlorate and permanganate of potash, phenacetin and other antipyretic coal-tar products, certain toadstool and snake poisons, etc., require differentiation in the consideration of a systemic effect, even though all of these possess a common property to produce in sufficient dose a certain toxemia. He notes the statement by one investigator that before certain substances can change oxyhemoglobin to methemoglobin the hemoglobin must be freed from the corpuscle by the latter's disintegration. Another observer is equally certain that even in these cases the change to methemoglobin is primary and that the solution of the red cell occurs subsequently. If, as in this case, the same substances, as, for instance, arsenuretted hydrogen, snake venoms, toadstool toxins, be set down by a third authority as producers of hemoglobinemia only, the suspicion is born that at the door of the met compound, perhaps, are laid some of the ill effects of poisons whose paramount action is rapid solution of the red cells. It is true that disintegration of the red cell does follow methemoglobin formation,[6] and it is not surprising, for the reason that

1. Simon, Chas. E.: Text-Book Physiological Chemistry, 1904.
2. Vaughan and Novy: Cellular Toxins, 1902.
3. In this case, although successive oxidation is not followed by elimination, it nevertheless has played an equally important rôle in the antecedent metabolism.
4. Baginsky holds that the amount of the purin base, xanthin normally present in the urine may be increased tenfold in acute nephritis.
5. Limbeck, Rud. R. von., Grundriss einer Klinischen Path. des Blutes, 1896.

6. The following are summaries of two detailed studies of fatal methemoglobinemia: Brandenburg's case, a woman 28 years old, who drank at night a solution of 525 grains of potassium chlorate in water was received at the clinic the following morning. The blood examination showed severe leucocytosis, poikilocytes, but these not numerous; also irregularly shaped large and small red cells. The blood was chocolate brown, and showed by spectroscopic examination, the bands of methemoglobin. The separated serum had a brownish tinge, contained methemoglobin, as did also the urine. Counts of red cells from the first to the seventh day demonstrated a daily decrease in red corpuscles as follows: 4.3 mill., 2.5 mill., 2.3 mill, 2.1 mill., 1.9 mill., 1.6 mill. After the fifth day no methemoglobin could be found in the serum. Necropsy following on the seventh day, exhibited parenchymatous inflammation of the myocardium, the liver, stomach mucous membrane and kidneys, the last also showing intense hemoglobin infarcts. (Grawitz.)

K. Ehrlich and Lindenthal's Case.—Ten hours after initial symptoms of poisoning by nitrobenzol, the blood was chocolate colored, the serum brownish, the spectral analysis showed presence of methemoglobin, which disappeared on the eighth day. Red cells were rapidly reduced, 2,275,000 on the fifth day, and falling to 900,000 before death on the nineteenth day. Poikilocytosis appeared on the third day and soon reached a remarkable degree. Polychromatic and fragmented cells were abundant. Nucleated red cells were first seen on the third day, and thereafter in very large numbers of all sizes. On the ninth day, the leucocytosis previously low, rose suddenly to 61,000, and the nucleated cells reported at 24,700. The Hb fell steadily to 40 per cent., which, with 900,000 cells was a remarkably high Hb index. There were many myelocytes among the white cells, so that at one time the blood presented the appearance of leukemia. (Ewing.)

Mohr observed six cases of benzol poisoning among workers in benzol factories. In all there was methemoglobinemia, schistocytosis and hemoglobinic degeneration, while nucleated red cells, microcytes and macrocytes were numerous. (Ewing.)

this superoxidation[7] of the corpuscle is needless in health and hence always presents an extraordinary form of hemoglobin. Yet, a legitimate question may be raised whether or not some other agent, beside that which produces the met oxidation, may not sometimes complicate the latter effect—for instance, the albumin destroying property and, therefore, destructive effect, on the red cell of potassium in the oft quoted met toxemia of potassium chlorate—a result which was manifest in experiments on herbivorous animals (rabbits); or, again, the possibility that in severe methemoglobinemia, the tissues being deprived of enough easily reduced oxyhemoglobin and unable to utilize the methemoglobin, do now attack the reduced hemoglobin, which, as we know, still contains considerable oxygen, deoxidizing it and, in turn, its derivatives up to corpuscular dissolution.[8]

Experimental research as to methemoglobin poisoning has been largely confined to the effects of potassium chlorate, because of the overwhelming blood change which follows the ingestion of large doses of this drug and the former comparative frequency of methemoglobinemia from this cause on account of common administration of toxic doses. A brief review of such research as given in von Limbeck's work on clinical pathology of the blood is as follows:

Marchand, who first experimentally studied the toxic effect on dogs of chlorin salts, stated that the absorption of the latter resulted in a methemoglobinemia which was the cause of death in acute toxemia. Against this conclusion, Stokvis took the position, from experiments chiefly on rabbits, that death in chlorate poisoning was solely due to salt effect and that the formation of MetHb was a postmortem change. This view was apparently refuted by Lenhartz and Riess, who demonstrated methemoglobin in intravascular blood of the animal experimented on. Following these experiments, von Limbeck was able to show by volumetric computation of O in the blood of dogs poisoned by $NaClO_3$ that in the latter, and possibly also in man, death in acute chlorate poisoning is due to asphyxia, resulting from lack of reducible hemoglobin. How great, says this observer, is the toxic effect of the chlorate salt as such on the organism, remains an open question which, while it can not be eliminated, may be answered in so far that for dogs and in acute poisoning, this effect is probably subsidiary to asphyxia as a cause of death. For herbivera this conclusion does not hold good. Stokvis, Marchand and Bokai showed that, with rabbits, death followed acute chlorate poisoning in almost all cases without the characteristic blood change and that at least a period of one and a half hours after death needed to elapse before methemoglobin could be demonstrated in the blood. Here the cause of death could be ascribed to the effects of chlorate salts as such. There was no disintegration of corpuscles nor did this seem to occur in acute poisoning of dogs. According to von Limbeck, in subacute methemoglobin poisoning, one must reckon with a greater number of complicating conditions which include production of methemoglobin, effect of salt as such on the tissues, decomposition of blood corpuscles, circulatory disturbances due to thrombi and, as the factor of chief importance, kidney irritation.

As subacute toxemia is the only form that would have to do with this argument, we are especially interested in its several dangers—certainly each as a toxic effect is sufficiently evil. And yet, aside from mere production of methemoglobin, which needs a 66.6 per cent. blood change to be fatal, if the physician as he prescribes, could not depend on his judgment to guard his patient from grave tissue change arising from injudicious treatment as regards dosage and period of drug administration, said treatment causing, for instance, great cellular disintegration of the kidney, the liver or other excreting organs, he would need to take from his drug armamentarium many important constituents of it, such as chloral, phosphorus and its compounds, bromin salts, the coal-tar antipyretics, salicylic acid and its derivatives, etc. Hence, if it then be a matter for the physician, not that he must ever avoid a methemoglobinemia as such, but that in therapeutic use of substances capable of producing this blood change, he must avoid a toxemia in his patient, we find herein quite the same problem to solve in relation to these drugs as confronts us in the use of most others we employ in treatment. And, in the same case, the practitioner must be accorded the right to produce a methemoglobinemia of non-toxic proportions if he can benefit the patient thereby.[9] I believe the patient may be, and indeed is, often benefitted by an induced methemoglobinemia effected by drugs now empirically employed, *by oxidizing through this means the suboxidized leucomains which we have found in time of disease, accumulate in abnormal amounts in the blood. These powerful reducing agents are able to take O from methemoglobin, although the tissues can not.*[10] In the asphyxia of extensive and, therefore, toxic methemoglobinemia, pulmonary respiration is, to a great extent, eliminated, because the hemoglobin, unreduced by the tissues, is brought to the lungs already oxygen laden. Herein methemoglobin acts as no special poison, for oxyhemoglobin returned to the lungs would give them as little to do. On the other hand, the partial asphyxia of disease, as evidenced by dyspnea and cyanosis, has as one, if not exclusive cause, *the increased amount of oxygen required by the system to oxidize the tissues plus the leucomains or other like basic reducing substances, with which need the lungs can not keep pace.*

With an induced methemoglobinemia in just that degree that may be required to sufficiently oxidize the basic substances, thereby preparing them for elimination or for further use in the animal economy, we obtain two paramount results: (1) The O_2Hb is conserved for use of the tissues. In reference to this statement, it is true that methemoglobin contains the same number of oxygen atoms as oxyhemoglobin, which point might be advanced as an argument that the leucomains could as well be oxidized by the normal oxy-compound as the

7. "In apparent contradiction to the fact that bacteria are capable of converting MetHb. to Hb. is that demonstrated by J. F. Lipowski that by means of pure cultures of other bacteria O_2Hb can be changed to MetHb. In the first case we have to do with reducing, in the second with oxidizing and oxygen-forming microbes." (Rudolf Kobert.)

8. If Co_2 be passed through a solution of oxyhemoglobin for a considerable time, reduced Hb is first formed, but if the process be prolonged, the Hb is decomposed, a precipitate of globulin is thrown down and an absorption band similar to that obtained when Hb is decomposed with acids (acid hematin) is observed. (Landois and Sterling.)

9. But for a generation of prejudice, originating in the therapeutic abuse of potassium chlorate and which pronounces all methemoglobinemia essentially toxic, a conclusion so self-evident would scarcely need discussion, if we but remember our daily use of three of the MetHb producing halogens in the form of iodin, chlorin and bromin compounds or salts, also the coal-tar analgesics and antipyretics. That one is called on to exercise care as to dose and period of administration of this class of drugs so as to avoid pushing a methemoglobinemia beyond therapeutic limits or because of other possible deleterious effects there is no question.

10. "It (methemoglobin) is, however, affected by the products formed in the blood during asphyxia, while COHb is not, the MetHb formed by the nitrites is reduced by these products to Hb, which as it passes through the lungs takes up O." (Landois and Sterling, Human Physiology, Fourth Edition, 1892.)

met-compound. It must be remembered, however, that the oxygen of the latter is in a different form wherein the oxygen atoms are more closely bound within the molecule than in oxyhemoglobin, and therefore the met molecule requires in all probability a greater amount of suboxidized basic material for its reduction than would be needed for the loosely bound normal oxy-compound.[11]

(2) *Some oxyhemoglobin is produced within the tissues, and herein vicarious function for an embarrassed pulmonary respiration is established.* The view that oxyhemoglobin may be furnished the organism otherwise than by the lungs may appear radical, yet apparently forces acceptance in the light of the following observations, viz., that if a careful decomposition of methemoglobin be made in glass by just enough of the reducing agent to permit the process to proceed slowly, spectroscopic examination will demonstrate the presence of oxyhemoglobin absorption lines before those of reduced hemoglobin are attained, the sequence, therefore, being methemoglobin, oxyhemoglobin, reduced hemoglobin (Jaderholm). Not only this, but the reverse is also true. If reduced hemoglobin be slowly oxidized to methemoglobin in glass, the spectroscope shows that here, too, oxyhemoglobin is an intermediate compound, the sequence being reduced hemoglobin, oxyhemoglobin, methemoglobin (Saarbruch). The similarity of chemical reaction that attends methemoglobin formation and its reduction in the experimental animal to the same procedure without the body permits us to believe that where either of the preceding reactions occur during life oxyhemoglobin must also appear as an intermediate product. *Hence, in induced, slight methemoglobinemia some of the methemoglobin reduced to oxyhemoglobin by leucomains is, no doubt, further reduced by the tissues themselves, or, again, in the course of an induced oxidation from reduced hemoglobin to methemoglobin not all of the intermediate oxyhemoglobin would attain the methemoglobin state, because of the appropriation here also of some of the former by the tissues.* This conception of methemoglobin utilization in disease, it will be noted, differs materially from earlier theory that the internal administration of potassium chlorate benefits by furnishing oxygen to the tissues in the course of its decomposition. The present hypothesis includes a series of reactions, (1) superoxidation of reduced hemoglobin or oxyhemoglobin to methemoglobin; (2) reduction of methemoglobin to reduced hemoglobin, with concurrent oxidation of reducing substances in the blood; (3) the occurrence of oxyhemoglobin as an intermediate product in course of corpuscular oxidation and reduction.

But, it may be urged, if methemoglobinemia at any time be other than harmful, how comes it to be associated with various pathologic conditions and in these without extraneous origin? It has been found in exudates and transudates, also in the blood following severe burns and scalds, in insolation, septic conditions, in Addison's disease, etc. The question may be answered thus: In these and probably many other morbid conditions, methemoglobinemia (always noted as only a trace and by no means of a degree that could be responsible for death of the patient) represents a conserving process of nature which we imitate by inducing therapeutically a like blood change. Nature accomplishes this by the products of metabolism. Of such products, which produce methemoglobinemia, two which may be cited are pyrocatechin and hydrochinon, and doubtless there are many others.

Viewed from the dual standpoint of oxidizer, both of reducing substances in the blood and of the tissues themselves when for some reason pulmonary respiration is inadequate to furnish sufficient oxygen, induced conservative methemoglobinemia would explain the present empiric use of substances which produce the met compound, viz., nitrite of amyl in angina pectoris, pyridin inhalations in asthmatic attacks, potassium chlorate in tonsillitis and its occasional use, long continued and with success to prevent recurrent abortions, the bromin salts in epilepsy, iron as the perchlorid in chorea minor and as insisted on by the older practitioners in sepsis, Lugols solution and the iodid of iron in scrofulous and cachectic conditions, potassium permanganate in anemia, quinic acid[12] recently recommended as specific treatment in gout, etc.

Because fumes of pyridin proved useful in asthmatic attacks, I concluded to try potassium chlorate as a constitutional in the same condition, and obtained good results, although I would not care to have a patient continue long on this drug, or at least without constant supervision, for fear of damage to the kidneys. Also, one need be clear as to one point. I do not mean to say that, because each of a number of drugs can produce a methemoglobinemia, they may be indifferently substituted in treatment, one for another. Without doubt other affinities, too, of these remedies must decide our choice. The rapid but evanescent relief from dyspnea and vasomotor spasm effected by use of amyl nitrite or pyridin fumes could not well take the place of the prolonged effect on metabolism of potassium chlorate or the latter of the bromin salts which experience has shown approaches specific effect in epilepsy. Yet substitution of met-producing drugs is, to some extent, efficient, as we have seen, and may again be noted herein that the one vegetable drug which it has been found fills a serviceable place beside the bromids in the treatment of epilepsy is *Solanum carolinense*, a plant which belongs to one of several classes that contain so-called saponin bodies, glucoside substances which produce methemoglobin.

There are many other facts pertinent to this line of thought which might be added, but enough has been said if, in response to this first paper, members of the profession, and especially such observers as are able concurrently to utilize clinic and laboratory, will find the subject of sufficient interest to test the principle here advanced, full confirmation of which would materially extend the province of rational therapeutics.

I take pleasure in expressing my obligation to Prof. W. E. Engle of the University of Denver for the privilege of working in his laboratory and for his assistance in examination of blood with the spectroscope.

Since writing the above article J. von Mehring's[13] frequently quoted thesis on potassium chlorate has come into my hands. One important conclusion of von Mehr-

11. In reference to this, the fact already pointed out, that methemoglobinization of the red cell is equivalent to a superoxidation, is again of interest here, in that it suggests the possibility that the O atoms when freed act as nascent O. According to Engler's views, the first step in systemic oxidation is the decomposition of peroxids by that class of ferments, known as peroxydases, while, according to Landois and Sterling, it is the active or nascent O that acts as so powerful an oxidizing agent that it converts water into hydric peroxid, N of the air into nitrous and nitric acid and CO into CO_2, which ozone does not.

12. Dry distillation of quinic acid yields pyrocatechin and hydrochinon (U. S. Dispensatory 17 Ed., page 1432) both of which transform O_2Hb to MetHb.

13. Mehring, J. von: Das Chlorsaure Kali, 1885.

ing was "that with an accumulation of CO_2 in the blood (blood from carotid artery in dyspnea) and in an amount not resulting in death, the deleterious effects of $KClO_3$ are increased in great degree" (i. e., absorption bands of methemoglobin were noted after a much shorter space of time than with normal blood from the carotid). The same result was observed after addition of small amounts of acid sodium phosphate to blood.

My own conclusions are just contrary to the above where slight, therapeutic methemoglobinemia is concerned, and which may, therefore, be stated thus—in dyspneic conditions, the greater the rapidity of an induced methemoglobinemia proportionate to the needed oxidation of increased amounts of reducing substances in the blood, the greater and more rapid the benefit to the patient. This is also in accord with personal clinical experience as regards relief of dyspnea by administration of certain methemoglobin-producing drugs in small amounts. I have not tested the effect of this same class of drugs in phosphorus poisoning, but I find in von Mehring's thesis the following reference: "Tessliers[14] observed at the clinic of du Moulin in Ghent a case of phosphorus poisoning, wherein the patient, owing to great repugnance to turpentine, was given potassium chlorate, with apparent beneficial results." It is significant that turpentine shares with potassium chlorate methemoglobin producing properties.[15]

SYMPTOMS, DIAGNOSIS AND PROGNOSIS OF UNCOMPLICATED INTESTINAL AMEBIASIS IN THE TROPICS.

W. E. MUSGRAVE, M.D.

Pathologist, Government Laboratory; Physician in Chief, St. Paul's Hospital.

MANILA, P. I.

SYMPTOMATOLOGY.

The symptomatology of amebiasis varies more than is generally taught and it seems desirable that this more comprehensive clinical picture be taken up more in detail, calling particular attention to the early diagnosis of the disease and to some of the peculiarities of the milder forms.

In discussing this question, writers have generally divided the cases into groups according to the clinical manifestation which, as clinical conveniences, answer the purpose and are fairly uniform. Osler considers it under the headings acute and chronic. Harris divided the disease into very mild forms, moderately severe cases and very severe ones. Lafleur and Futcher divide them into grave and gangrenous forms, those of moderate intensity and chronic ones.

I shall discuss the subject under the following convenient clinical divisions:

1. Latent and masked infections.
2. Mild and moderately severe ones.
3. Severe cases, including gangrenous and diphtheritic ones.
4. Infection in children and in the aged.

These clinical forms often change from one to the other and may do so several times during the course of the disease in the same patient. The amebic process in all is essentially chronic, but acute symptoms from concurrent or secondary infection by other agents are frequently seen.

Latent Infections.—By this term are designated those cases in which there is a true pathologic process, containing amebas without diarrhea or other symptoms which would ordinarily indicate the presence of such an infection.[1]

It might be objected that this latency is really a period of incubation. In a sense, this may be true, but as many of the cases, even fatal ones, always remain in this class, and as there are nearly always certain manifestations in addition to the positive one of the presence of amebas, it seems better to give latency a separate place in the clinical classification; and, furthermore, the most useful results will be secured by making such divisions rather sharp and by confining the incubation period in all classes of the disease to the unknown time between the infection and the appearance of amebas in the stools.

Under these circumstances it is readily seen how difficult latency may be to differentiate from what properly may be termed incubation. This becomes all the more difficult when we remember that amebas may possibly be found transiently in the normal intestine and that there are at present no practical means of differentiating between species of amebas. It is clear, therefore, that by basing treatment on the method of diagnosis recommended, unnecessary therapeutics may occasionally be instituted.

Cases of this latent class are not infrequent in Manila and are becoming more and more recognized, as we learn more of the character of the infection, and I do not believe that giving them a place in a purely clinical classification can be criticized by those who have had experience with the disease in the tropics. They are certainly of very great importance and deserve the most careful consideration, for the life of the patient often depends as much on the diagnosis and treatment here as it does in some of those clinically more active infections. Some of these patients, as has been noted, never show clinical manifestations during life, and in some others, when such symptoms do develop, the time for successful therapeutics may have passed.

The course and outcome, as in some other types, varies greatly. Usually, after a period ranging from a few weeks to many months, more active symptoms develop and in general the patient assumes the clinical type of a more or less severe dysentery. This change may occur gradually or very suddenly, and in the latter instance, unless the patient has been under very close observation, we may be misled into believing it to be one of primary acute amebic dysentery. On the other hand, some of these cases go on to recovery or death, without ever showing active diarrhea.

The symptoms during latency may be entirely absent subjectively and objectively for considerable periods of time; but usually conditions develop, which, by the ail

14. Annal de la Soc. de med. de Gand, 1882.

15. Other authorities which may be referred to are: Beilstein, F., Organische Chemie, Dritte Auflage. DaCosta, John C., Jr., Clinical Hematology, 1901. Ewing, James: Clinical Pathology of the Blood, 1903. Grawitz, Ernst: Klinische Pathologie des Blutes, 1896. Kobert, Rudolf: Lehrbuch der Intoxicationen, 2 vol., 1902-1904; U. S. Dispensatory, 17th edition, Article on Ptomaines, 1898. Wood, H. C., Therapeutics, Principles and Practice, 10th edition, 1897.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

NOTE.—The other papers in this symposium will appear in a later issue of THE JOURNAL.

1. Dock, in 1891, reported extensive amebic ulceration in the cecum of a man who had not had dysentery and who had passed only normal stools. Councilman and Lafleur, in 1892, and Lafleur, in 1897, called attention to the fact that an amebic process may be latent, the stools being well formed and no amebas being found in the small adherent flakes of mucus, and that in these cases the true nature of the disease is often not suspected until abscess of the liver calls attention to it. These observations have been confirmed by Osler, Rogers and many other writers.

of postmortem findings, we have come to recognize as indicating the nature of the process. As has been stated in previous publications, these cases are essentially those in which the lesions are in the cecum and upper colon. Careful stool examinations, obtained after a hydrogogue cathartic, often show mucus mixed with old discolored blood and other tissue elements, indicating both the location, and with their associated amebas, the nature of the infection. Rather indefinite, dull, aching abdominal pains are frequent and are often attributed by the patient to "taking cold," because they are first noticed during the night or early in the morning, and afterward are usually most active at these times. There may also be some "indigestion," lassitude, headache, a coated tongue, foul breath, etc. Loss of appetite may be present, and the patient often notices slight loss of weight, and, if a woman, usually complains of loss of color and a yellow skin. Physical examinations will usually secure additional data. Deep palpation discloses tenderness along the colon, most often over the cecum, and if the duration is great and the patient not too fat, a thickened intestine may be made out.

Examples of this class of cases, as stated above, have been reported by several writers, and I have called particular attention to them in previous publications. Two additional examples from many that might be given are briefly as follows:

CASE 1.—A young married woman, previously in good health, came to the Philippines in 1903. About three months later she consulted me, complaining of general lassitude, dull pains in the back of the head and neck, coated tongue and bad breath.

Treatment.—She was given calomel and soda in broken doses, followed by a Seidlitz power the following morning, when examination of the stool showed amebas fairly numerous and of good size. She was placed on a bitter tonic of iron, quinin and strychnin. For the next three months there was little change in the general health and the bowels continued regular. Amebas were again demonstrated in the stools and this time were mixed with mucus, showing streaks of old discolored blood.

Course of Disease.—During the next month she complained of dull abdominal soreness, which on pressure was more marked in the region of the cecum. "Indigestion" was complained of, anemia was noticeable, and she had lost five pounds in weight; but the bowels were still regular and apparently normal. At this time she consented to take enemas, but after about a week's time she became dissatisfied and passed to the care of another physician, on whose recommendation she spent three months in Japan. While in that country her symptoms of indigestion were less noticeable and headaches were absent, and she returned feeling in better health and spirits. Shortly after her return to Manila, however, there was a recurrence of the symptoms before complained of, and in a more pronounced form; in addition flatulence became annoying; but there was still no diarrhea. Stool examinations after a hydragogue cathartic showed numerous amebas, and considerable mucus with some blood. Her symptoms, as usual, were relieved temporarily by the cathartic. About this time she had had a moderate diarrhea, which lasted for a few days and was followed by constipation, with severe pains in the right iliac region. Another attack of diarrhea came within a week and dysenteric feces began to be voided. Typical acute dysentery developed, and death occurred within ten days after the acute onset and nearly one year from the time when amebas were first found in her stools.

Autopsy.—At necropsy an old advanced amebic infection of the cecum and upper colon, with most extensive ulceration and chronic fibrinous adhesions were found. More recent amebic lesions were scattered throughout the rest of the colon, and an exquisite acute diphtheritic dysentery was engrafted on the older process.

CASE 2.—A Filipino prisoner in Bilibid prison showed amebas in his stools on repeated examinations for more than four months. Sometimes after administration of salts blood cells were present, and the mucus was sometimes stained with dark, partly decomposed blood. He was apparently a perfectly healthy man, and had no diarrhea or dysentery.

Autopsy.—At necropsy, following death from intercurrent lobar pneumonia, the cecum, and ascending and transverse colon showed amebic ulceration, which was quite advanced about the hepatic flexure.

In addition to latency, the symptoms of this infection may be completely masked, and mistakes in diagnosis are, no doubt, frequent when the disease is endemic.

The clinical manifestations of several diseases may mask those of a latent or mild amebic infection. The scope of this paper will not allow a full discussion of these, and the subject will be treated more thoroughly in a paper soon to appear on the complications and sequelæ of amebic infections. Perhaps the most frequent of these conditions, and those which are also likely to lead to mistakes, are chronic constipation and gastritis or appendicitis. The latter of these has already been discussed.[2] Gastric symptoms of more or less severity are particularly prevalent in the tropics, both with and without amebic infections of the colon; and for this reason, particularly when severe, often completely obscure the less active disease when present.[3]

Numerous examples might be cited, showing the variety and prevalence of such conditions; but my object here is to call particular attention to it, without leaving the impression that every case of stomach trouble in the tropics masks an amebic infection of the colon.

Constipation is a very prevalent condition in the tropics, as it is in the United States, particularly among women; and, as might be inferred, may frequently mask amebic infection in the early stages, and in the latent and less active forms until irreparable damage may have been done to the colon.

I have under my care now a woman who has for years been a chronic sufferer from constipation. About five months ago she began to lose weight and other symptoms developed, suggesting probable amebiasis, which was confirmed by microscopic examination of the feces. During this time, the constipation had persisted, notwithstanding that blood and mucus were obtained with every specimen secured by salts, and diarrhea did not develop until about two weeks ago. Dysenteric stools quickly followed, and treatment, which is still being given, was instituted.

Such cases as this and those previously described are of frequent occurrence in practice in Manila and support the conclusion which I have already expressed, namely, that the presence of amebas in the stools should always be considered diagnostic, at least in so far as treatment is concerned. The fact that one occasionally sees a case similar to those mentioned above, in which clinical dysentery never appears, the patient never feels ill, and amebas eventually permanently disappear from the stools, is not a sufficiently strong argument against

2. Bull. 18,. Bureau of Government Laboratories. THE JOURNAL A. M. A., April 8, 1905, p. 1098.

3. I now have in mind such a case in a very prominent man in Manila. He had for years been a sufferer from chronic gastritis, and after a few months' residence in the Philippine Islands the symptoms became more aggravated, and just as previously, he had periodic outbreaks of diarrhea, only that with the increase in the stomach symptoms, the diarrhea became much worse. At the end of six months he was confined to his bed, unable to retain food, and reduced almost to a skeleton, and the bowel evacuations had become dysenteric. An examination of the feces showed numerous amebas with blood and mucus. Under careful treatment, directed particularly to the amebic infection, he slowly improved and was eventually restored to his usual health.

the conclusion given, until such time as definite data indicating the final outcome are available early in the infection.

Mild and Moderately Severe Cases.—These form by far the great majority of those seen in Manila at the present time. Formerly they occupied about the same place as that occupied now by latent ones, i. e., they were treated as simple diarrheas from other causes, and often the true nature of the infection was not recognized until the development of bloody mucus discharges, or more often the pathologic report called attention to it.

The symptomatology of this class of cases, as well as that of the more severe cases, is so well understood and has been so often described that I will condense that part of the paper into calling particular attention to the conclusion which we have come to in our work in Manila, that diphtheritis and other acute pathologic processes seen at postmortem in this disease are the result of other etiologic agents and are not a part of the true amebic infection.

The larger number of these cases develop from the latent ones already described, just as the majority of the more severe ones usually arise from this type. It is impossible to say just what proportion of them develop as such primarily or follow a more or less definite latent period; clinically, the time of onset is usually dated from the appearance of diarrhea. There may be prodromal manifestations before the onset of diarrhea or dysentery in cases in which amebas may not be found at the time, but here the prodromes are very like the manifestations of the latent type, viz., indefinite abdominal pain, generally attributed by the patient to "taking cold" and explained by not a few as being caused by sleeping without an abdominal band on certain cool nights; tenderness on palpation along a part or all of the colon, "indigestion," headaches, usually of a dull cerebral type, a general feeling of depression, ill health and irritability of temper, and sometimes melancholic tendencies, with anemia and loss of weight.

In the majority of properly treated patients the disease clinically rarely passes from diarrhea, but sometimes here as well as in the larger number of untreated ones diarrhea is only preliminary to a more violent clinical picture. Many cases, however, even without treatment, never become dysenteric in the general acceptation of the term.

The course in uncomplicated cases is extremely chronic and the outcome rarely recovery, being most commonly the development of "sprue" or chronic gastroenteritis giving other clinical pictures; and the most frequent termination is death from intercurrent disease or complications. I am still in correspondence with a number of old Manila patients, now in the United States, in which the cases are of from four to six or more years' duration, and in which symptoms are still very much the same as when the patients left Manila.

Following a gradual onset from a period of known latency, the diarrhea is usually intermittent and more marked in the mornings, consisting of two, three or four soft, semi-fluid stools, without mucus or blood and passed without pain. This condition may last from one to several days, and is usually followed by a tendency to constipation. Succeeding outbreaks usually become more severe and may last for days, weeks or months, until the appearance of blood or mucus causes the patient to realize that he has dysentery, and it is at this stage that he most often appears for treatment. When the onset is more sudden, some blood and mucus are frequently noticed in the stools from the first; there may be some tenesmus and symptoms may continue for a few days, to be followed, as in the first case, by a period of constipation. The subsequent course of the disease in the two cases may not be different, but usually the more acute the onset the more rapid development of more severe symptoms. It is certain that in not a few of these the sudden outbreak is not due to amebas, but to other causes. There are frequently the same extrinsic causes for these outbreaks as when they occur in subjects free from amebas, which is, of course, of frequent occurrence in the tropics, and, in addition to this, careful inquiry will often reveal that there were significant manifestations before the onset in the amebic cases, and it may even be observed when amebas were known to be present for some time prior to the outbreak.

Severe Cases.—The clinical aspects of this type of the disease are the best understood and carefully described, and need but a brief summary here. As is true of the class of cases just discussed, in by far the greater number of cases it develops from a previously existing latent or milder type.

To this class belong also the diphtheritic and gangrenous cases, which are always severe and are undoubtedly due to a concomitant or secondary infection with some other agent, which is also the cause of severe forms of other types.

The onset here, whether occurring in an apparently healthy subject or following an existing milder type, is usually quite sudden and is characterized by the phenomenon of an acute dysentery from other causes. There are frequent mucus bloody passages, with tenesmus, colic, thirst and perhaps some fever.

In this severe form, whether apparently primary or secondary to one of the milder types, the course is usually much shorter and death is frequent from toxemia, perforation of an ulcer or from exhaustion of the patient. There are cases in which postmortem examination may show excellent nutrition and a rotten intestine, with either extensive gangrene or diphtheritis. Even in these, however, not infrequently the severe symptoms subside under treatment, and the case may continue as a more moderate one, or may be even mild in its symptoms, thus exemplifying the previous statement that the clinical types designated may frequently change from one to another even in the same patient.

Infection in Children.—Particular attention has been called to the disease in children by several writers.[4]

I have had twenty-one cases in children between the ages of 6 months and 10 years in private practice in the Philippine Islands, and one necropsy in a girl 3½ years old. When we consider the increased danger of infection which is present for children in the tropics, we must conclude that they present an increased natural immunity, a fact which is still further borne out by a study of cases in which infection does occur, for the disease is usually of a very mild type and is very amenable to treatment. In only two of my cases (in addi-

4. Amberg, in 1901, carefully reported five cases from the Johns Hopkins Hospital, and reviewed the literature on the subject. Harris reported thirty-five cases, four of them in children under 10 years of age. Strong found amebas in the tuberculous ulcers of a 3-year-old child; Slaughter in liver abscesses of a 17-year-old boy; Kartulis in children of all ages except infancy; Pfeiffer in the stools of several children; Lamb in a 2-year-old child; Lutz in the stools of a little girl; Sonsino in the intestinal mucus of a child; Cahen in a girl 4 years old; Gneftos in the liver abscess of a 6-year-old girl. Oddo (1897) reported twelve cases of liver abscess following dysentery in children between the ages of 2 and 13.

tion to one death) was the disease what could be called moderately severe from its clinical manifestations. The symptoms, in general, conform to the milder types in adults, and recovery is almost certain under proper treatment. I have seen children in whom there was undoubted active infection recover without treatment.

The aged, as in the case of children, seem to manifest a decided natural immunity; but, when once established, the disease in them is usually of more serious import than even in young adults. The symptoms are commonly of a severer nature, the course is more rapid, and the mortality higher, generally, as in other patients, due to complications or to intercurrent disease.

One thing particularly noticeable both in children and in the aged, as well as in natives of the Philippine Islands, is the great relative infrequency of liver abscess. I have not seen a case of liver abscess in more than one thousand clinical cases and one hundred autopsies of natives of the Philippine Islands.

Analysis of Symptoms.—All varieties of facial aspect are seen, from a healthy one in some of the rapidly fatal cases to the more emaciated, anemic, yellow and even cachectic of some in the old long-standing ones. Usually for a long time the patient does not appear to be ill, and I have seen patients with the disease of more than two years' duration who had lost no time from the daily occupation.

In the early part of the disease the skin rarely shows any noticeable change, but in the old emaciated cases there is a general waste and a scrawny, dull, goose-flesh skin, often of a muddy color or even jaundiced. In this class of cases there is frequently an odor which is quite disagreeable and which is as characteristic as for any of the diseases in which its diagnostic value is emphasized. Perspiration is usually not very active, but cases are occasionally seen in which the night sweats equal those of tuberculosis. Edema, particularly of the feet, ankles and less frequently at the hands, and the face about the eyes, is often present, but is not necessarily an indication of Bright's disease. Albuminuria and casts may be present at times when these edemas are noticed; and involvement of the kidneys is frequently observed postmortem, though in the majority of the cases terminating in recovery the proper functioning of the kidneys is restored, and there is no further trouble from this source. Bed sores are rarely seen, except in the most chronic types of old emaciated, anemic patients, shortly before death. Boils are frequent in the tropics during convalescence from any wasting disease, and in amebiasis they are not exceptional. Of rashes, urticaria is of quite frequent occurrence and often annoying in its persistence. Quinin rashes, from absorption of this drug, are the most frequent and troublesome, often requiring a suspension or change of treatment. Enlargement of the superficial lymphatics without pain is common, particularly among natives; but this is so frequent an occurrence in health and other diseases that diagnostic importance can not be attached to it.

Digestive System: The organs of digestion bear the brunt of this disease, and it is here that diagnostic symptoms are most frequently observed. The appetite is most generally good, particularly so in the latent and mild cases during the early part of the disease. Later catarrhal conditions of the upper intestine, stomach and even esophagus are followed by variations in the appetite, due to such alterations. In the early disease, likewise, but little or no discomfort is felt from satisfying a normal desire for food, but later such action is often followed by an increased diarrhea and by a further disturbance of the already disordered upper digestive tract.

The tongue is in no sense a valuable interpreter of the conditions at the seat of the amebic lesions. It may be clean or coated with furs of various colors and types. It may be large or swollen, showing the marks of the teeth along its edges, or it may be red and pointed. In very old chronic cases, in which the clinical picture is that of sprue, the tongue is one of the valuable indicators and here often shows small ulcers along its sides and under the tip. Glossitis, with superficial ulcers and hyperemia of the mucous membranes (sprue), is not uncommon, and when present causes a dryness and burning sensation, which is very annoying. In the same class of cases, too, the frequent lesions of the esophagus cause a burning pain along this viscus, which is aggravated by acids or solid food. Thirst is usually increased and often markedly so when the clinical symptoms are quite active, due, no doubt, to the loss of body fluids through the ulcerated bowel.

Symptoms referable to the stomach depend, for the most part, on various stages of catarrh of this organ and do not differ from symptoms of similar conditions due to other causes. In the early part of the disease, the stomach most frequently remains in good condition, but in the later stages, and sometimes quite early, its symptoms may be very annoying. Nausea is frequent, but vomiting rare at any stage. Both these conditions are aggravated and frequently are direct sequences to treatment by enemas. Symptoms of hyperacidity, with beefy-red tongue and epigastric pain (heart-burn), are encountered from time to time in all classes of cases; but a fermentative condition, with gas, a large, coated, flabby tongue, nausea and loss of appetite, are more common conditions.

The small intestine may be normal, but sometimes in the more chronic cases it shows a general catarrhal condition, which manifests itself by the usual symptoms of enteritis of other etiology. True amebic ulceration occasionally extends for from 2 to 10 cm. into the ileum, and in one case a perforation of an ulcer above the valve occurred, and the symptoms brought about by it closely resembled those seen in severe infection of the cecum.

The Large Intestine and Feces: The bloody-flux interpretation of the word dysentery must be abandoned in this disease, or, perhaps, a better solution would be to change our nomenclature so as to avoid calling it dysentery at all. It is true that diarrheic, or even dysenteric, stools are present at some time during the course of the disease in the majority of cases which proceed to a fatal termination; but even here this is not always so, and true dysenteric stools are not the rule in patients in whom treatment has been instituted early and properly administered.

There are numerous examples in literature of patients who have died of the disease in whom during life there was slight or no clinical dysentery. Such cases have been reported by Councilman and Lafleur, Osler, Dock, Strong and Musgrave and many others; and we (Mr. Clegg) have emphasized it in a recent paper.

In this paper I have already cited cases, and to them could be added at the present time a considerable number in which there was no diarrhea or dysentery at any period during the course of the disease, and yet death occurred from perforation of an ulcer or from intercurrent disease. Further, within the past year, in addition to a case already mentioned, I have performed the necropsy on the body of a patient who had been treated

for more than six months for constipation, in whom advanced amebic ulceration of the cecum and ascending colon was found after death, resulting from perforation of a liver abscess. Such cases, of course, are not the rule, but they are sufficiently numerous to be of importance and are emphasized particularly for the purpose of demonstrating that, as in the case of many other infections, experience broadens our conception of the clinical picture.

With this data, I am prepared to state that in this disease there may be any stage between constipation and severe clinical dysentery, or alternations between these two conditions may be present throughout the course of the disease; and it is in this variation that we secure data for the arbitrary clinical division of the cases.

From what has been said it is seen that this clinical division is not necessarily borne out by the pathologic picture, and, therefore, it must not be inferred that the disease is of necessity mild because of the absence of a severe diarrhea.

In the great majority of cases, after a more or less prolonged incubation or period of latency, alternating periods of diarrhea and constipation develop, and usually the diarrhea becomes more severe with each return and persists longer, the constipation becoming less marked until finally formed feces are no longer passed. The diarrhea is usually more pronounced in the morning and after meals. In long-standing cases, the patient complains that the food passes through unchanged as soon as eaten.

There is nothing characteristic in the macroscopic appearance of the feces. Their consistency, amount, color, etc., may vary between the widest limits. In the early stage of the disease they are frequently formed and otherwise normal, and the surface may or may not show coatings of mucus sometimes streaked with blood. The morning specimens are usually the first to have a diarrheic appearance and are often copious and fermenting. When the infection is more advanced, the feces may take on the appearance of those due to chronic catarrh—fluid, with mucus and particles of undigested food. On the other hand, frequent large, light gray fluid or granular, foul-smelling evacuations, with mucus, and with or without fresh or old blood, and sometimes masses of tissue and occasionally casts of the mucosa, may persist for weeks or months. Again, particularly when the infection is low in the colon and rectum and there is some severe secondary infection, the stools may resemble those of acute dysentery in character and symptoms produced. The odor of the feces in many cases is particularly offensive and all but characteristic, so much so that diagnostic importance may be attached to it. The next most important point of diagnostic value obtained from a macroscopic examination is the indication of the location of the infection by the character of the blood, when such is present.

Amebic infections can be diagnosed with certainty only by microscopic examination of the feces or other material, and by this method also other valuable data may be obtained.

The best method of securing a specimen and the manner of procedure for microscopic examination have been described in *Bulletin* No. 18, Bureau of Government Laboratories, and some additional points are mentioned under the heading of diagnosis in this paper.

The presence of motile amebas should be considered diagnostic, at least in the tropics. The difference in size and numbers, the presence or absence of enclosed blood cells, and other described points of differentiation, I believe to be fallacious, as pointed out in a previous publication.

Many other parasites and substances of more or less importance are often found associated with amebas. Among animal parasites are the *Trichomonidæ, Cercomonidæ, Megastoma entericum, Embryo strongyloides,* ova of uncinaria, *Trichuris, Tænia, Oxyuris,* and others, either singly or in various combinations. At least some of these have a part in the production of the symptoms and must be reckoned with in treatment. Of other substances present may be mentioned leucocytes, red blood cells, pus, epithelial and other cellular elements. Various crystals are often present, but with one or two exceptions are of no diagnostic importance. Many other substances may be found, but as they have been so repeatedly discussed by others and are of such slight importance to the subject in hand they will be omitted.

Circulatory System: The circulatory system in this disease shows essentially the changes of secondary anemia. The pulse is usually of good quality, except in the later stages or in the presence of complications, when it takes on a type due to such involvements. Early in this disease the blood shows little or no change, the red cells being normal in numbers and free from abnormal elements, the leucocyte count is normal, the relative proportion of the cells is not disturbed, and the hemoglobin estimate is also normal. As an uncomplicated case progresses, the red cells begin to show changes due to anemia, and in the later stages the irregularity in their size and shape may be quite marked, and the count may show great reduction, notwithstanding the loss of fluid from diarrhea. The leucocytes under like conditions show some disturbances in relation of varieties, usually an increase in polynuclears and eosinophiles, but these changes are never such as to be of diagnostic value. Hemoglobin decreases with a reduction in the number of red blood cells. The spleen is not enlarged, except in some severe cases complicated by or associated with other infections.

Temperature: Fever is most often absent throughout the course of the uncomplicated disease. It may be present in a moderate degree, when it is usually of an intermittent type, highest in the afternoons. In acute exacerbations from any cause, and when there is an intense secondary involvement, particularly diphtheritis, it may be an important factor. Only recently I was for some weeks very much puzzled by an intermittent temperature, reaching its maximum of from 38 to 39° C. about 10 o'clock a. m. daily, in an amebic patient, until other symptoms proved the presence of an intercurrent syphilis. It is frequently found, but by no means constantly so, in liver abscesses. Here, if the abscess is also the seat of bacteria in considerable numbers, the septic temperature may closely resemble that of a malarial infection, endocarditis or almost anything else, of either the intermittent or the remittent type. On the other hand, one occasionally finds a large liver abscess without fever at any time. As the disease becomes more advanced, it is quite common for patients to exhibit subnormal temperatures, particularly during the forenoons, for days, weeks or months in succession.

Nervous System: This probably does not suffer much as a direct consequence of amebic infections, but of this I am not at all sure. There are many cases of neuritis, neuralgia, etc., which are so closely connected with the disease that until we are more fully acquainted with the exact method of the action of amebas in other parts of

the body, our opinion can only be based on supposition.

Pain: The subject of pain in general, however, may be conveniently discussed here. Its variety and intensity in this affection is very great. It is partly a direct consequence of lesions and partly the result of more remote and sometimes unexplainable causes.

Tenesmus is more often an indication of complications or severe secondary involvement than of amebic infection. It is never present in the latent forms and is usually absent or very slight in those of moderate severity; but during acute exacerbations of either of these, and particularly when diphtheritis or other secondary infection, including that of *B. dysenteriæ Shiga*, is present, it may be very severe. It is much less severe or more likely absent when the lesions of whatever type are in the cecum or upper part of the colon.

Colicky pains are not infrequently seen, and even severe acute intestinal colic sometimes supervenes, especially when there is marked catarrh of the small intestine.

Dull, aching, somewhat indefinite abdominal pain is one of the most frequent prodromal symptoms, and quite frequently it is persistent during the disease. Sometimes it is so severe and constant that rest is impossible for days or weeks at a time. Though most usually complained of as being of maximum intensity along the course of the colon, as general careful palpation will show, not unusually it is found only in the region of the cecum and is sometimes complained of in the muscles of the back. Such pain may be due to the processes going on in the bowel, and, again, as demonstrated by postmortem examination, it may be the only indication during life of the most extensive serous inflammations and adhesions. These pains are often most active in the night, even in the mildest cases of infection, and may interfere seriously with the patient's rest.

Pains described by patients as "heart burn in the abdomen" may be general or more frequently local. When active lesions are low in the sigmoid and rectum, these and what are described as burning pains are frequent. The latter may be intense about the rectum, and may sometimes extend down the backs of the thighs and even to the calves of the legs. Old sciaticas are often "fired up" under these circumstances, and the beginning of sciatica is associated with such cases often enough to be suggestive.

Pains simulating those in appendicitis have been more fully discussed in Part 2 of *Bulletin* No. 18, Bureau of Government Laboratories, and in the JOURNAL A. M. A., April 8, 1904. They are probably the most important with which we have to deal, because their true interpretation is so vital to the patient and because they are of such general occurrence in all varieties of amebic infection, from the latent to the gangrenous, with or without the presence of amebic or other forms of appendicitis.

Neuralgias, myalgias and arthralgias are met with too frequently to allow them always to be considered accidental associations. Persistent, dull headaches, particularly of the back of the head and neck, are also not uncommon. The genitourinary and respiratory systems and the organs of special sense rarely contain lesions which produce symptoms of any importance in the uncomplicated disease. The same is true of the joints and the osseous system, though complications may involve any of these structures.

DIAGNOSIS.

There are no classical symptoms in the disease, and hence an absolute diagnosis can be made only by microscopic examination of the feces.

In remote areas where the infection is endemic and where microscopic facilities are not available, one would be justified in making a diagnosis for purposes of treatment from clinical manifestations alone, but where laboratories are accessible this should never be done.

If one remembers the multiform clinical pictures which have already been discussed and watches the case for some time, a diagnosis of amebic infection may reasonably be inferred, but it must be borne in mind that the clinical picture does not in general differ materially from that often seen in diseases with an entirely different etiology, and, further, that there is not a single symptom or group of symptoms which is confined to this disease alone.

The following are the most important clinical manifestations in a question of diagnosis:

1. The bowel evacuations, particularly their odor, and the presence or absence of blood. Their consistency, quantity, frequency and the presence or absence of mucus, are much less important.

2. Abdominal soreness, which is increased on pressure and extends particularly along the colon, is most common and, taken singly, is one of the most valuable symptoms. Its diagnostic importance is greatest when of maximum intensity over the cecum and ascending colon.

3. So-called "indigestion" headache, general lassitude, with nausea or pain below the stomach after eating, etc., is quite common, but is also prevalent at other times, so that but little importance must be attached to it alone.

4. Loss of weight, especially in the presence of a good appetite, is quite important and is the best guide to the progress being made by the infection.

As already stated, neither one nor all of these symptoms taken together are sufficient for an absolute diagnosis; but when taken together in cases where careful palpation reveals a thickened, tender colon in places where it may be felt, they make the nearest approach to a sure diagnosis possible without microscopic examination of the feces.

The question as to whether the presence of amebas in the feces is always absolutely diagnostic of an infection of the colon has already been discussed. It may be that such is not always the case, but I believe that it is so nearly so that such an occurrence, at least in the tropics, should be considered diagnostic, at any rate for purposes of treatment. Such a conclusion is all the more justifiable when we consider the great certainty of good results in treatment instituted early, the long incubation period or latency which severe cases may show, the inability ever to establish a more certain diagnosis in those cases of light infection which terminate in recovery and, finally, above all, *the great reduction of the danger of liver abscesses by instituting early treatment.* It will be remembered that, according to statistics from many places, including Manila, over 20 per cent. of untreated patients or those not treated by enemas have developed liver abscesses, and that in a very large number of patients treated by my colleague and myself in private practice during the last few years, along lines laid down in *Bulletin* No. 18, there have not been more than two cases of liver abscess which developed after treatment was instituted. Inasmuch, then, as a correct diagnosis can be made only by finding amebas in the intestinal contents, and as their presence here, at least for

purposes of treatment, are to be considered diagnostic of infection, regardless of clinical symptoms, the best method of determining their presence or absence should be part of our subject.

This is not always an easy matter. When there is active clinical dysentery, a microscopic examination of one of the passages will usually reveal amebas, but even here single or even several examinations will often yield negative results. The specimen for examination should, when practicable, be one obtained by some hydragogue cathartic, because the infected area frequently includes only a portion of the colon, and by this means the specimen is more certain to contain feces from the entire track.

For the same reasons, the method of extracting a specimen through a speculum can be of maximum value only where the lesions are in the lower bowel. For obvious reasons castor oil is not a satisfactory cathartic for this purpose, and specimens obtained by enemas are likewise unsatisfactory.

The specimen should be as fresh as possible when examined, for, while amebas will usually remain motile for several hours and sometimes for days, in many instances they lose their motility in a very short time. In Manila, a warm stage will never be found necessary, and a diagnosis had best not be made from any but motile organisms.

Usually no difficulty will be experienced in differentiating amebiasis from other diseases, but when other troubles exist as complications or associated diseases, which is of very frequent occurrence, the solution is often not so simple. Suffice it to say here that in practically every instance in which such complications or associations do exist they are rarely of a nature which offers contraindication to the institution of the usual treatment of amebiasis, and, therefore, whether or not the nature of the complicating trouble is determined, treatment of the amebic infection should be prosecuted.

PROGNOSIS.

The prognosis in this infection should take several points into consideration, and the evidence in each individual case should be carefully weighed before an expression of opinion is justifiable.

Fortunately, in Manila, owing to the good results of treatment, the physician is rarely called on to say very much; but in the more prolonged and persistent cases prognosis is eagerly sought by the patient and his friends. In general, under proper treatment recovery is the rule in young, well-nourished adults, in whom the disease is not of too long duration.

The principal determining factors in giving such prognosis are the manner of treatment, age, nationality, general condition of the patient and duration of the disease at the time treatment is instituted, reaction to treatment, the presence of complications and associated diseases, and, finally, the location of the amebic lesions.[5]

It must be remembered that in a certain percentage of cases, particularly in children and natives, the patients recover from the disease without any treatment whatever. On the other hand, one occasionally sees a patient in whom the disease is progressive from the first, and death is not apparently delayed by any form of treatment.

The disease is generally milder in children and in natives of the tropics, and its course is more often shorter and its mortality higher among the aged. Alcoholics apparently are less frequently infected, but when once the disease is established the gravity of the prognosis is increased. Previous good health and good general physical condition are favorable factors. The shorter the duration of the disease at the time treatment is instituted and the greater the tolerance for enemas the more favorable the prognosis.

The presence of complications or associated troubles, such as liver abscess, severe hemorrhoids, fistula or fissure in ano, and many others less frequent, materially decrease the chances of ultimate recovery. Probably most important of all, however, is the location of the lesions. As a rule the higher up the lesions, the greater the mortality and the less active the clinical dysentery. Severe infections of the cecum, unless treated early and carefully, are always serious.

CONCLUSION.

In conclusion, I wish to emphasize the fact that intestinal amebiasis (amebic dysentery) manifests itself in a much broader and more comprehensive clinical picture than is generally allotted to it.

Waiting for bloody mucus stools to appear before making a diagnosis and instituting treatment is responsible for a large percentage of the present mortality from the disease in Manila. Such stools sometimes appear early in the disease, more usually after considerable damage has been done, and occasionally are never seen before a fatal termination or recovery.

Suppose, for example, that by treating every patient in whom motile amebas are found, as recommended in this paper, we do occasionally treat a person who would have recovered without treatment, or possibly would never have had an active lesion, are we not justified, when we consider that by such procedure established early, without waiting for clinical dysentery, we increase many fold the chances of recovery of all patients?

DISCUSSION.

DR. GEORGE DOCK, Ann Arbor, Mich., said in regard to the importance of distinguishing the latent, that he was fortunate enough to see a latent, mild or variable case very long ago, and he has already called attention to it. Briefly, the history of the case is as follows: The patient was a man who, for several months, had no loose stools at all and no diarrhea, and was absolutely free from any symptoms ordinarily referred to as dysenteric, yet he developed a liver abscess which was operated on and proved to be amebic. The patient died a few days later, and it was shown that not only were there lesions in the cecum, but also in the upper part of the large intestine, as well as in the liver. The stools Dr. Dock examined and found no amebas or other evidences of the disease. If the patient had been under his observation a longer time the diagnosis might have been made prior to death, especially if saline cathartics, as Carlsbad salts, had been given to facilitate the examination of the stools. In diagnosis, the most important thing is the proper examination of the stools, and this has been much neglected because it has been supposed to be so difficult. By giving Carlsbad salts, stools can be secured whenever wanted, and there is really no difficulty in finding the amebas, even in cool media or in cool rooms. As an important and practical aid in this examination of the stools, they should be examined, not in deep vessels, but in flat vessels, the broad low granite dishes answering the purpose very well. A certain amount of practice is necessary in order to be sure always that what is seen are really amebas. Dr. Dock likes the modification of Jenner's stain, which he believes to be as good as the specific stains. His experience in the South shows that it is comparatively easy to treat this disease if it is seen at the beginning. Cathartics should be vigorously given, and irrigations of any kind are useful, his preference

5. In my last 100 completed cases treated in private practice including all types and stages of the disease, 96 patients have permanently recovered without leaving the Philippine Islands. There has been one death and three have returned to the United States.

being for strong saline solutions. In the chronic cases the treatment is more difficult. These latent cases are the ones which are likely to be seen in this country. At the Saratoga session, Dr. Dock was able to report such a case, and within the last year he has seen another example which occurred in a man who had never been outside of the United States at all, and yet he had a severe infection with *Amœba coli*. The greatest care possible is demanded in the treatment of the patient. It is very necessary that constipation should be avoided. Instructions regarding the diet may vary greatly. He has seen beneficial effects from the use of ipecac used after the manner of Strong, covering it with salol. About one year ago he saw an interesting case of amebic infection from the Philippine Islands. The patient had amebic dysentery, as well as uncinariasis and the *Tricocephalus dispar*. He was treated for uncinariasis with thymol, and the amebic signs then disappeared as well. Although this is spoken of as a tropical disease, it may occur in other parts of the country. Though the clinical picture varies greatly, the diagnosis can be made, and the treatment is becoming more and more satisfactory.

DR. H. R. LEMEN, Alton, Ill., stated that he has had two years' experience in the Philippines, and made careful examinations of 532 males and 53 females who were taken there as prisoners without any apparent evidences of the disease whatever, and he found 91 males and 11 females with amebas. Among 50 soldiers there were found 10 cases of liver abscess.

DR. STANLEY BLACK, Los Angeles, Cal., asked Dr. Musgrave for the points in differential diagnosis between *Amœba coli* and other amebas which exist in the stools. Dr. Black has seen a number of cases in which amebas were present in the stools, but in which there were no symptoms of dysentery, such as one expects to find when the *Amœba coli* is present. He also asked if Dr. Musgrave considers the presence of red corpuscles diagnostic of the *Amœba coli* and if the pathogenicity for cats is of importance in diagnosis. In Dr. Black's opinion the material for examination can best be obtained by the introduction of a rectal tube. The mucus so obtained often contains many amebas.

DR. F. C. SHATTUCK, Boston, stated that he has seen one case of amebic dysentery in a man who had not been out of New England. This simply corroborates what has already been stated, that the disease is not necessarily one of the tropics.

DR. CLAUDE A. SMITH, Atlanta, Ga., said that physicians meet some cases of amebiasis in the South, but of course not anything like the number found in Manila. As an illustration of the fact that some patients appear to recover or even recover without treatment, Dr. Smith said that five years ago, at the request of Dr. H. F. Harris, he made a postmortem examination of a man who ten years previously presented clinical symptoms of a severe type of the disease. He removed the colon, but there was no evidence of any ulceration, nor any macroscopic signs of previous ulceration. This also showed that the symptoms of the patient are not necessarily an index of the extent of the lesions. He recalled one or two autopsies in which he found extensive ulcerations throughout the colon, and yet the clinical symptoms did not indicate anything serious. There was one case in a negro man, about 45 years of age, whose muscular development was perfect, presenting no signs of emaciation, and who was not considered to be in serious condition, and yet he died forty-eight hours after admission to the hospital. The colon's entire mucous membrane was found to be necrotic, and yet that man had been hard at work until two days before death. He asked if Dr. Musgrave has been able to trace these cases of amebiasis after apparent recovery, and if he has found many relapses.

DR. W. E. MUSGRAVE, Manila, P. I., said that all the questions and points brought out in the discussion have been carefully gone over in the present paper and in previous publications. (See THE JOURNAL A. M. A., April 8, 1905, p. 1098, and Bull. 18, Bureau Government Laboratories, Manila.) In conclusion he emphasized the fact that the symptoms produced by this affection are in no way proportionate to the danger done to the bowel.

AFFECTIONS OF THE THYROID IN CALIFORNIA.*

HERBERT C. MOFFITT, M.D.
SAN FRANCISCO.

Six years of hospital and private work in San Francisco have strengthened the conviction that affections of the thyroid, like aneurisms and early arteriosclerosis, are more common here than in many other cities of the United States. With this idea in view, letters were sent during the last months to men in each county of the state asking for information as to the occurrence of goiter, myxedema, sporadic cretinism, and exophthalmic goiter in their districts. My obligations are here expressed to many colleagues who have kindly sent reports. There seems to-day little need for review of reasons in grouping exophthalmic goiter with thyroid affections—the influence of nervous factors can not be denied the possible influence of other internal secretions in etiology is recognized, but the gland plays a chief rôle in symptomatology (even though, as Moebius says, there may be a prethyroid stage of the disease). Despite the vast amount of work of late on the parathyroids by Gley, Edmunds, Welch, Benjamins, Jeandelizo, Moussu, Vassale and Generali, Lusena, MacCallum, Brissaud, Pineles and others, it is not yet possible to say that they color in any way the picture.

The statement of Hirsch that "our information on the endemic occurrence of goiter in North America belongs for the most part to the early years of this century and is very fragmentary" can be modified in light of articles by Richardson, by Adami on goiter in Canada, by Osler on "Sporadic Cretinism in America," by Dock on "Goiter in Michigan." *The Medical Sentinel*, February, 1904, had an editorial on goiter in the northern Pacific states, and lately Musgrave of Washington described the great frequency of the condition in the Wenatchie and Puyallup Valleys in animals as well as man. Praslow years ago reported cases of cretinism among Indians near Cape Mendicino, Humboldt County, and among the Spaniards in Southern California. Osler in his article on sporadic cretinism wrote: "Praslow's account of the occurrence of cretins in California I have not seen, but I have letters from several correspondents in that state who know nothing of its existence at present, while in the State Insane Asylum at Stockton, Dr. Hoisholt tells me there are only two cases." It is interesting to note from reports of Dr. Gross of Eureka and Dr. Delamere of Ferndale that goiter is common in Humboldt County, not far from Cape Mendicino, although accounts of only two cretins are sent from that district. I have seen two cretins among Indians near Kelseyville, Lake County. Reports from Southern California do not substantiate the account of cretinism among the Spanish settlers.

GOITER.

Data concerning goiter must of necessity be unsatisfactory, as slight or even moderate enlargements of the gland are often overlooked; and, as in all statistics, the personal equation of the reporter must be considered. A few weeks since a physician came personally to report the absence of thyroid affections in his district and presented himself a good example of myxedema. The testimony of physicians from counties about San Francisco Bay (Marin, Alameda, Santa Clara, San

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

Mateo, and San Francisco), confirms the idea that moderate enlargements of the thyroid are common. Most patients are natives of California, and inheritance from parents coming from endemic goiter regions of Europe would seem to play little part. Dr. Eleanor Bancroft, Berkeley, writes me that 5 per cent. of the young women entering the University of California in 1904 had enlarged thyroids. Since January 1, 1905, I have noted moderate enlargement in 75, large goiters in 8 patients out of 546; 14 cases were in men. This would give a percentage of 15.2 in individuals, nearly all of whom are native born, or who have lived for years in California. In one family five members have goiter, in another three. In a number of young women accompanying nervous symptoms seem definitely referable to thyroidism, but in the majority of instances the enlargement is without influence on the general condition.

Dr. Pope of Watsonville has noticed 12 decided goiters in 1,200 cases, but writes that small tumors are much more frequent. Reports from the southern part of the state (San Diego, Riverside, San Bernardino, Los Angeles, Santa Barbara, Kern, Tulare, Kings, and San Luis Obispo counties) would indicate that goiter is less common there than in the bay counties. Dr. von Zwalenberg of Riverside says it is much less common than in Michigan. Dr. Sanborn writes from Redlands that there are about 40 cases of moderate goiter in the practice of different physicians there. Los Angeles and Pasadena physicians report the condition uncommon, and men from Fresno, Tulare and San Luis Obispo as rare. Through the kindness of Dr. P. K. Brown, however, I am able to quote a letter from Miss Jacobs of the Los Angeles Normal School in which she says goiter is common in the young women in attendance, and that not a few report other cases in the family—one term 8 per cent. had enlargement of the thyroid.

The interior mountain counties of the central part of the state seem much less affected. Letters from Madera, Merced, Mariposa, Stanislaus, Tuolumne, Amador, El Dorado, Placer, Nevada, Sierra, Butte, Yuba, Sutter, Yolo, Colusa, San Joaquin report few cases. Dr. W. A. Briggs thinks moderate sized goiter fairly common in Sacramento county. Dr. Dempsey of Vallejo, Solano county, sees enlarged thyroid in 4 per cent. of his patients. Lake, Napa and Sonoma have few cases. Dr. Margaret Evans mentions a family in Calistoga, Napa county, four members of which have goiter. Of the northern coast counties Mendicino and especially Humboldt appear to show endemic goiter. Dr. Bond of Ukiah writes: "I can only state in a general way that thyroid enlargement is very prevalent in this vicinity, most cases being of American parentage and without symptoms. Dr. H. G. Gross of Eureka writes that he sees a number of cases practically all of which come from an area about ten miles long and three wide, partly in the valley and partly in the foothills. Dr. H. S. Delamere of Ferndale, within the district spoken of by Dr. Gross, says: "Thyroid enlargement is quite prevalent here." Dr. Jorgensen of Fortuna, Humboldt county, however, sees but few cases. Professor A. C. Lawson of the University of California, in a paper on "The Geomorphogeny of the Coast of Northern California," describes the peculiar formation known locally as the "Wild-Cat Series" that extends through Humboldt county. Its peculiarity depends on the softness of the beds in general, the frequent alternation of harder and softer rocks, and the deep erosion of the Eel River and its tributaries. It would be of interest to map out the goiter region with reference to this peculiar terrane. The entire peneplain consists of marine deposits, pliocene and postpliocene, with a coastal strip of later mesozoic and tertiary rocks. The reports deal but slightly with questions of etiology—mention is made simply that most cases are seen in women and that enlargement of the neck has often been first noted during pregnancy. In several instances note is made that the goiter has enlarged with each pregnancy. No mention is made of goiter in animals, but I have seen it in one horse and two dogs in the past year.

MYXEDEMA.

Reports here are less equivocal. The bay counties again show the greatest number of cases partly on account of greater population, and partly because cases from a distance drift to San Francisco as a center. I have descriptions of 30 cases throughout the state. Tehama, Monterey, Sacramento, Santa Barbara, Riverside, Stanislaus, Marin, Yuba, Mendicino, Santa Cruz, Yolo, Kern and Colusa report one case each; Solano, Santa Clara, Butte, two cases; Fresno and Los Angeles three, and Alameda sends five. San Francisco physicians send accounts of 43 cases, without duplicating any of the reports from other counties as far as can be ascertained. Adding 10 of my own, there is a total of 53 cases from San Francisco, and 83 throughout the state. I have purposely omitted reports of doubtful cases, accounts of *formes frustes,* or descriptions of exophthalmic goiter with myxedema. In 50 cases in which mention was made of sex, 39 were women and 11 men. Age varied from 18 to 64. Thirteen had decidedly large thyroids, the myxedema resulting from changes in old goiters. In 22 the thyroid was not palpable, and no mention of the gland is made in 31. Of 55 ten were of foreign birth, but had been years in California. Twice the condition resulted from operation on goiter. Two of my cases were born in Norway. Two had spent some years in Alaska, and symptoms developed while there. Emphasis in description is laid chiefly on skin, voice, and mental changes and disturbances in locomotion. Three women had frequent epileptiform attacks which did not yield to thyroid medication, although skin and mental conditions improved. A woman reported by Dr. P. K. Brown had profuse menorrhagia before thyroid treatment was begun.

Some years ago I saw myxedema in a girl of 20 whose mother had just died of the disease. Skin of the face and over the extensor surface of the arms was thick and dry, there was a diffuse growth of hair over the face and arms that had appeared during the last year; the voice was remarkably deep and harsh, menstruation had ceased ten months. The fundus showed atrophy of the nasal side of both discs, and color vision was limited in the temporal half of both fields. In all probability change in the hypophysis was the cause of eye symptoms and perhaps of the hypertrichosis. Menstruation appeared under thyroid extract and the skin grew better, but the girl committed suicide and no autopsy was obtained. Uhthoff described blindness in a boy of 6 with myxedema; vision improved under thyroid, and this was attributed to shrinking of the hypophysis. Coppez describes retrobulbar neuritis from thyroid feeding, but no instance has fallen under my observation. Endeavor has been made chiefly by Brissaud, Murray and Pineles to distinguish between myxedema of thyroid and of mixed thyroid and parathyroid

origin. They would attribute considerable influence to the parathyroids in determining sexual and mental changes. In cases with profound mental changes, therefore, we would look more closely for other signs of disturbed parathyroid function—particularly for evidence of tetany or convulsive seizures. Only one of my cases was mentally profoundly affected, and here the Chvostek and Trousseau phenomena were constantly absent. In one woman with most marked exophthalmic goiter and epileptiform attacks the Chvostek phenomenon was present on two examinations; partial thyroidectomy led to disappearance of all symptoms, no tetany developed, and the patient has been well three years.

FORMES FRUSTES.

Very interesting to me are the *formes frustes*. I have notes of 11 cases, 5 men and 6 women, all of whom presented the same clinical picture, and in whom definite improvement took place under thyroid medication. One was a woman of 35, two were men of about 45, and the others were from 55 to 65; the sister and daughter of one woman had goiter; one man and two women had small goiters. Such cases are fairly common in the literature of thyroid insufficiency. Some of these people have for years had dry skins, thin hair, pains between the shoulders, paresthesiæ, joint pains. In two of my cases influenza seemed a factor in precipitating thyroid symptoms—skin changes, nervous unrest and tachycardia. Most characteristic is the dry skin, scaling of the scalp, thinning of the outer half of the eyebrows, loss of hair on the neck and in the axillæ. Fat pads occur above the clavicles, and not infrequently there is a large pad over the upper dorsal vertebræ, a bib-like roll across the neck and upper sternum, thickening of the subcutaneous tissue across the lower ribs and above the elbows and knees on the extensor surface. Pains in the knees and ankles and occasional "giving away of the legs" are frequent. The voice has often a peculiar deadened husky quality.

Five instances of infantilism of the thyroid type described in detail by Brissaud, Meige, Hertoghe and others have come to my notice in the past two years. Two boys of 14 and 18 grew quickly under thyroid treatment, and showed increased development of pubic and axillary hair and of genitalia. One boy of 17 was excessively fat and had complications of muscle dystrophy and coxa vara. Another boy of 16 died of diabetes; thyroid extract had no effect on the sugar elimination. The fifth boy had acute nephritis and uremic convulsions.

SPORADIC CRETINISM.

In Osler's article on "Sporadic Cretinism in America" are included three cases from California, two of Dr. Hoisholt from the Stockton Asylum and one of Dr. Osborne from the Home for Feeble-minded Children at Glen Ellen. I have reports outside of San Francisco of 37 cases that from descriptions or photographs seem definitely examples of cretinism. Mongolian idiots and chondrodystrophy cases are not included in the classification. Of these, seven were born outside of the state in Mexico, Wisconsin, Illinois, New Zealand, New York, New England, and four have died. Doubtless the list can be extended by a more thorough canvass at some later day. Dr. Dawson, superintendent of the Home for Feeble-minded Children at Glen Ellen, Sonoma County, writes that there are several cases of idiocy of Mongolian type and a few cretins, but these are not included in the above. Physicians in San Francisco send me accounts of 28 cases, to which I can add 7 of my own, making a total of 61 cretins now living in the state, and all native born. The majority of reports chronicle absence of palpable thyroid enlargement. No valuable data as to etiology are available. Dr. Frances Sprague reports a girl of 2 from the Children's Hospital in San Francisco who died of general tuberculosis, with extensive tubercular changes of the thyroid. Dr. Millicent Cosgrave sends me notes of a girl of 5, born in New York. Mother and grandmother had goiter, and the maternal grandfather died of tuberculosis. The child seemed normal during the first year, and walked at 18 months, at 3 had measles and later tuberculosis of the glands of the neck. Since then she has not walked well, has backache, is nervous, skin dry and rough, appearance that of a cretin, is extremely stupid, abnormally developed—is as tall as a child of 10. Breasts, hips and limbs look like those of a girl of 16. The mental condition has improved under thyroid treatment. Brissaud calls attention to tuberculosis of the cervical glands as a cause of myxedema. In one of my cases symptoms developed soon after diphtheria. Dr. Dempsey of Vallejo reports seeing a cretin whose mother had a large goiter, with myxedema. Dr. Sprague mentions a girl of 14 with a big thyroid, another of her cases was but 18 months old. In a case of mine—a girl of 7—the parents were from the south of France. From the history, the father's sister was probably a cretin, and a brother of the patient died at 6 months in a condition suggesting cretinism. Dr. P. K. Brown tells me of two brothers born in San Francisco whose parents are German and perfectly well. In the greatest number of cases parents were born in California. In three instances parents were from the Azores, in two from Austria, in two from southern Italy, in three from Ireland. Detailed descriptions will be left to a later paper, but photographs of ten cases are now available.

EXOPHTHALMIC GOITER.

This affection would appear to be much more common in the counties about San Francisco Bay than in the other parts of the state. Dr. Emmet Rixford of San Francisco sends me notes of 8 primary cases and 3 secondary to goiter of years standing; Dr. T. W. Huntington, 5 primary and 8 secondary; Dr. W. I. Terry, 10 primary; Dr. J. H. Barbat, 10; Dr. Mac Monagle, 29. Physicians content themselves, as a rule, with saying that the affection is "common" or "decidedly frequent." Dr. Abrams has seen 30 cases. My own list includes 33 well marked cases of exophthalmic goiter, excluding *formes frustes*. Of these, 9 were male and 24 female; 7 occurred in patients with goiters of years' standing. Most observers agree as to the thyroid factor in the disease, but emphasize the influence of an unstable nervous system and the immediate effect of nervous shock. Dr. J. H. Barbat saw 3 cases develop acutely after fright. Some few years ago in the wards of Dr. Kerr in the City and County Hospital of San Francisco I saw an Italian with unusual history. Three weeks before, in perfect health, he had been out prospecting in one of the interior counties, had strayed off, and was lost in the mountains for two days. He was sick from that time, excited, restless, could not sleep, vomited, grew rapidly thin, had breathlessness, palpitation, trembling, could scarcely walk. Examination showed exophthalmic goiter, with cardinal signs, emaciation, terrifying unrest. For days he remained the incarnation of terror, but then slowly changed to the more uneventful stage of the disease.

In a woman under the care of Dr. Abrams, the father and brother showed symptoms of the disease. Two of my patients were mother and son and two brother and sister. The mother of one young woman under my care has myxedema. Dr. Crowley of Oakland reports exophthalmic goiter in mother and son. Dr. F. L. Adams of Oakland reports the disease in mother and daughter; the mother is from Derbyshire, a well-known center for goiter. Another of his cases gives history of the same affection in her mother and mother's mother.

In the reports of simple goiter, frequent mention is made of associated nervous symptoms, tachycardia, and tremor. These cases are similar to the ones described by Mikulicz and Rehnbach, by Kocher and others as instances of thyroidism associated with goiters of varying types. They form a transition to true exophthalmic goiter developing in individuals who for years have had goiter without symptoms. In a woman of 41, seen two years ago, there had been a marked goiter for 18 years; eight years before nervous symptoms became bothersome; there was exophthalmos, tachycardia, tremor. Swelling of the eyelids and a peculiar brawny infiltration of the side of the neck and face led to a diagnosis of complicating kidney disease, but this was not present. The swellings were analogous to the hardening of the skin of the face reported by J. Schulze, a firm infiltration not like true scleroderma nor yet of the consistency of myxedema. In a woman seen four years since, there had been a moderate goiter for years. During pregnancy signs of myxedema, as thinning of the hair, dry skin, supraclavicular pads, were reported to have developed and to have disappeared under thyroid extract. Unfortunately with continuance of the thyroid extract a typical exophthalmic goiter developed, which was marked by all cardinal signs when I saw her.

Breuer of Vienna and Gautier of Geneva have lately emphasized anew the occurrence of exophthalmic goiter after treating goiter with iodin preparations. Breuer cited a case developing after the use of K I—a syphilitic woman who had shown no previous struma. Rilliet, 1860, and Lebert, 1862, gave many instances of iodism in goiter cases. Theodor Kocher, in a recent article on "Die Therapie des Kropfes" in the *Deutsche Klinik*, gives a masterly review of the action and dangers of iodin compounds. His conclusions are based, in part, on the studies of iodin elimination in normal individuals and cases of goiter by A. Kocher published in vol. xiv of *Die Grenzgebieten der Medizin und Chirurgie*. He makes clear that most symptoms are due to thyroidism rather than iodism. With quick recession of a goiter, danger of intoxication greatly increases, but the disappearance of a struma is not necessary for production of symptoms. The smallest dose of K I may cause severe thyroidism in exophthalmic goiter or cause rapid emaciation in the newborn or in pregnant women. "In excited, unduly animated, thin individuals who always have congested faces, who tremble at nothing, get palpitation on the least occasion, and who sweat easily, one has to deal with beginning thyroidism, and one may cause outspoken exophthalmic goiter through careless use of iodin."

I have had several cases of iodism after small doses of K I in patients with small goiters, and now make it a rule to examine the thyroid and to look for signs of exophthalmic goiter before prescribing it. In one young man in whom K I, syr. acid. hydriod. and tr. iodi gave toxic symptoms, iodipin was given hypodermically with impunity, confirming the observations of Schuster and Lesser; it could be demonstrated in the tissues by *x*-ray plates six weeks after injection. According to Gautier, the source of plant and water iodin supply is the iodin "dust" given to the atmosphere by sea water. Rilliet of Geneva thought a change to the seashore might develop symptoms of exophthalmic goiter in patients with struma. It is an interesting speculation whether the number of cases about San Francisco are in any way due to the prevailing strong sea winds. It is certain that a few cases from the interior have done worse on the coast, and insomnia is apt to be a bothersome feature of the change. In eight of the reported cases there is noted a combination of exophthalmic goiter with myxedema, but description lacks sufficient detail to admit such classification. It is well known that edema and skin infiltration of different kinds may occur in pure exophthalmic goiter. Kocher describes a number of such cases. Dr. Rixford reported a remarkable case of a young woman of 29, who was married a few weeks before contracting scarlatina. Three months later a goiter, the size of a walnut, was observed. One year later there was rapid growth during pregnancy, and still greater enlargement after a second pregnancy two years later. General edema, tremor and choreic movements were noted, besides the usual symptoms. Edema rapidly disappeared after operation. In two of my cases, fat pads and hard infiltration of the skin over the lower ribs persisted after operation. In a discussion on "Internal Secretions" two years ago (reported in the *Clinical Journal*), Horsley described certain anomalous cases of myxedema, with a peculiar excitable mental state, inability to exert, symptoms of heart insufficiency, and fat pads or diffuse skin infiltration. He regarded them as combinations of athyroidism, with a certain amount of aberrant internal secretion, the "dysthyroidism" of Moebius. He advises in treatment almost total removal of the gland, and then supplementing its secretion with thyroid extract. I have under observation for two years and a half a woman who lived abroad years ago, for some time in centers of goiter, such as Geneva and the Pyrenees, and who for years had the nervous and heart symptoms of exophthalmic goiter. There has never been exophthalmos, but at times there is a fixed stare or glare that to me is rather characteristic. For six months the pulse was never below 100, and during attacks of palpitation 160 or more. There are at times remarkably large supraclavicular pads, such as are seen in myxedema, and a diffuse bib-like pad of the same tissue, feeling like half solidified fat, stretches across the front of the neck and down irregularly four or six inches below the clavicles and across the sternum. An apron of the same kind extends across the epigastrium and lower ribs. The case is similar to those reported by Horsley. Of chief interest is the variation of the condition under alternate treatment with rodagen and iodid of iron as described below.

Formes frustes of exophthalmic goiter would require a separate paper. There is danger in labeling too many indefinite nervous affections with this convenient diagnosis, which only a combination with cardinal symptoms should justify. I have seen enlargement of the thyroid, with nervous symptoms and tachycardia, the result of masturbation in young men. Since my attention was called to it by Ortner of Vienna, I have seen the same thing, the result of excessive tobacco smoking in boys. Of interest in considering eye symptoms of the disease

are the reports of Arslau, Spiegler, and Holz concerning the occurrence of exophthalmos in adenoid cases and its disappearance after operation. During the last year Dr. C. M. Cooper and I have been testing the value of von Graefe's sign in diagnosis. It was curious to note the occasional development of this and Stellwag, with other symptoms of mild thyroidism, after administration of K I. Our results confirm the observations of Sharkey and of Flatau that the sign is frequently seen apart from thyroid disease. It was particularly common in Italians, probably because of the greater tendency to keep the eyes widely open while talking.

THERAPY.

The goiters seen here rarely demand operation on account of their size. Dr. Rixford, Dr. Terry, Dr. Rosenstirn, however, send me accounts of 20 operations for cystic or adenomatous goiter. The necessity of caution in the treatment of goiter, and particularly exophthalmic goiter, with iodin compounds or thyroid extract has been sufficiently emphasized above; the senseless administration of thyroid extract in large doses for obesity, arteriosclerosis, and other cases of supposed thyroid insufficiency should be discountenanced. Cunningham has attempted to prove that toxic symptoms are due to contaminating cadaveric derivatives and not to the active thyroid principle, and claimed that fresh glands may be given with impunity in exophthalmic goiter. The occurrence of well-marked exophthalmic goiter after administration of K I or iodothyrin in goiter cases would, however, speak decidedly for the theory of hyperthyroidization.

The reports of treatment in myxedema and cretinism are enthusiastic. It is usually not necessary to give large doses of a good thyroid preparation; in cretinism I begin with one grain daily and rarely go beyond 5 grains. Many myxedema patients need only small doses, even at first; some of them can not take more than 2 or 3 grains without disagreeable nervous symptoms. Dr. Ebright tells me of a man of 64 who had severe rheumatoid pains each time the dose was increased beyond two or three grains daily. Bramwell speaks of an acquired intolerance, and mentions a case in which large doses were well borne, but later even 1/20 of a tablet produced marked toxic symptoms. Paresthesiæ and other unpleasant symptoms may be modified by giving Fowler's solution at the same time. Opinions are in accord that preparations representing the whole gland can not wholly be replaced by the active principle iodothyrin. Bramwell, Magnus-Levy, Warner von Jaurenegg report encouraging results in the treatment of endemic as well as sporadic cretinism.

Until recently medical treatment of exophthalmic goiter was limited to electricity, hygienic measures, and a long list of drugs for symptomatic use. It is very difficult to judge of the efficacy of any method of treatment in an affection notoriously so uncertain in course and symptoms. I have seen good results from long-continued faradism, as recommended again of late by Horsley, the patients use the battery themselves for an hour or two daily, fastening the electrodes over the neck, front and back. With the treatment suggested by Wm. Thompson, I have seen no effect in marked cases. Strontium or calcium bromid—30 to 45 grains daily—or the bromid of quinin, 15 to 30 grains daily, as recommended by Forscheimer and Shattuck frequently modify nervous symptoms. Phosphate of soda, suggested by Trachewsky and indorsed by Kocher, or the glycerophosphate of soda, certainly control tachycardia and nervous unrest in not a few instances. Belladonna I prefer to digitalis or strophanthus; salicylates, sulphanilate of soda, intestinal antiseptics have availed little.

Despite reports of Goutschomkov and Mankovsky, endeavors to produce a specific thyreotoxic serum have as yet been abortive. Gley first suggested that deficiency of parathyroid function might be a chief factor in etiology of exophthalmic goiter. MacCallum found the parathyroids four times in eight operations for exophthalmic goiter; twice they were smaller than usual and twice degenerated; in one acutely fatal case none were found. Benjamins found them apparently normal in three cases. Moussu saw no result in one case from feeding parathyroids of cows. MacCallum reports feeding 12 glands daily for some weeks in a case of moderate severity without effect. From evidence yet at command it is not possible to say that the parathyroids in any way influence the affection.

It is not possible to dwell on results of operative treatment, though I am convinced that many cases belong to the surgeon. Five of my cases have gone to operation. In four improvement was almost immediate and the patients have remained well. One woman died four days after operation, with symptoms suggesting parathyroid insufficiency. It has seemed to me that more attention in operating should be given to the statement of Horsley, that division of the isthmus is sufficient to lead to retrogressive changes and shrinking in the rest of the gland. I have had no experience with the *x*-ray treatment as advocated by the Mayos and Beck.

In the last years effort has been made to develop a specific treatment of exophthalmic goiter. Ballet, Enriquez, and Lanz were pioneers in the movement. Lanz suggested that milk of dethyroidized goats might contain substances antagonistic to the exophthalmic goiter poisons. Burghart and Blumenthal from Leyden's clinic first used serum from a myxedema patient with encouraging result, and later introduced "rodagen," a precipitate from the milk of dethyroidized goats. Leyden, in *Die Medicinische Klinik*, reviews results attained and thinks them definitely favorable. Improvement is noted in three or four weeks, but treatment must be continued for months. Kollaritis reports three cases treated four to six weeks with rodagen without effect. Kuhnemann reports betterment in one case under 6 grams of rodagen daily. In 1901 Moebius communicated three cases somewhat improved by serum of dethyroidized goats. This has been put on the market by Merck and is given internally in 5-gram doses every second day, being administered in wine. Moebius has since reported benefit in 2 cases, Schultes in 1, Rosenfeld in 1, and Indermans, Boerma, Hempel, Lomer, Duerig, Peters, and Thienger in others. Thienger gives account of an acute case responding quickly to the serum, of two with improvement, and of one with no result.

Such a new method of treatment must be most conservatively judged. I have had experience with rodagen in three marked cases over periods of four to eighteen months. In one severe case, 6 grams daily were given for four months with no appreciable effect, and the woman was later operated on successfully by Dr. T. W. Huntington. In a woman with marked nervous symptoms, insomnia and tachycardia, all symptoms seemed definitely to improve under five months' treatment with 6 grams daily; the moderate exophthalmos is un-

changed, but the pulse rate is normal and the struma is smaller. A third woman has been taking 6 grams daily, off and on, for eighteen months. She had suffered from tachycardia, insomnia and nervous unrest for years. Sodium phosphate, bromids, salicylates, bromid of quinin and electricity did not control symptoms, and she refused operation. She had supraclavicular fat pads and the peculiar skin infiltrations described above. Rodagen has seemed to control the pulse for months as nothing else did, and she is enthusiastic over its effect on insomnia. After four or five weeks of steady use, she complains of depression and weakness, and has to stop for two weeks. Fat pads increase during rodagen administration, and two or three times the experiment has been tried of giving her iodid of iron in small dose. This each time promptly brings return of tachycardia and nervous symptoms, but modifies skin infiltration. Rodagen would seem to be of some benefit in these cases, therefore, but I would pass judgment only after a long series of cases. My experience with thyreodectin has been too limited to report. Dr. W. F. Cheney mentioned a case in which it seemed to control the heart symptoms. Dr. P. K. Brown tells me of a woman who grew worse rather than better under four or five weeks' treatment.

The whole question of the thyroid and its influence on development, metabolism and decay is a fascinating one. It would be valuable to report more fully the early history of patients with myxedema and exophthalmic goiter, to classify more carefully early heart, digestive and skin symptoms of the latter affection. I have seen two paroxysmal tachycardia cases that developed later exophthalmic goiter. In one woman peculiar general pigmentation with vomiting, diarrhea and weakness had led to diagnosis of Addison; Oppenheim mentions a similar case. I have under observation a man with Parkinson who presents thickening of the skin of face and extremities as described by Fraenkel and Lundborg. A woman who has twice had eclampsia came to me with a large thyroid and symptoms suggesting beginning myxedema; she is interesting in view of the work of Nicholson, Lange and others on the relation of thyroid to eclampsia. The possible influence of the thyroid in California as an etiologic factor in our very common arteriosclerotic and renal affections should be remembered.

DISCUSSION.

DR. JAMES J. WALSH, New York, stated that he has tried the effect of paratyphoid extract, though without getting very encouraging results. About three years ago Dr. McCallum of Baltimore suggested a connection between the parathyroids and the symptoms of Graves' disease. Many years ago Professor Gley made investigations on this subject, and came to about the same conclusion. It seemed thoroughly justifiable then to try the effect of the drug. Dr. Walsh treated four patients. In two milder cases the parathyroid seemed to be of benefit. In two severer cases, it not only gave no relief, but seemed to make some of the symptoms worse. It is doubtful if the parathyroid extract was entirely pure and free from thyroid material, although every effort was made to secure it in the pure state. It must not be forgotten, he said, that younger patients, that is, those under 25, frequently get better, even with marked symptoms, under almost any treatment. It is surprising to note how severe some of the cases are and how complete the recovery. Intermissions are extremely common, and may well be attributed to treatment when they are only phases of the disease. In older patients intermissions are rarer, and it is on these that new remedies must be tested if there is to be any reliance on the results.

DR. E. F. WELLS, Chicago, said that it has been his fortune to see many cases of exophthalmic goiter, and no patient who had been treated for any considerable time before coming under his observation, but had been given thyroid extract, and invariably with the effect of increasing the symptoms. He is sure that there is an impression in the profession that thyroid extract is the remedy for exophthalmic goiter, and a warning as to the danger attendant on such treatment is eminently desirable. Empirically, Dr. Wells has found that codein is extremely useful in these cases. He gives from one-quarter, one-half or three-quarter grain three or four times a day, and for months with perfect immunity. The patients bear it well. After an experience with this remedy for eight or ten years, he is led to advocate it as the most efficient for the purpose of any which he has any knowledge.

DR. G. W. MCCASKEY, Fort Wayne, Ind., emphasizes the importance of noting the spontaneous fluctuations that occur in some of these cases of a very chronic character with any line of treatment and sometimes without any treatment. He has had two patients under observation for a period of ten or twelve years, which have exhibited these peculiarities to a striking degree. At times they appeared symptomatically well, and one of them has remained so for one period of two or three years, but in both cases the characteristic syndrome has infallibly returned. Due allowance must be made for these variations in estimating the value of treatment.

DR. GEORGE S. WHITESIDE, Portland, said that the type of thyroid enlargement seen in Oregon is a very mild one and much more prevalent among women than men, and more among the young than the old. As a rule, these patients present no symptoms. The condition seems to increase at the time of pregnancy and goes down afterward. Goiter in dogs is not uncommon in Portland. Exophthalmos seems to be the exception in both men and beasts in Oregon, but Dr. Whiteside has heard that it is much more common in California.

DR. C. R. GRANDY, Norfolk, Va., thinks that there are many more cases of enlarged thyroids in the United States than were formerly thought, simply because physicians had not been looking for them. In his own practice he has seen a considerable number of cases. When occurring in young girls he does not do anything for them. There is one class of goiter with a decreased secretion, which, as a rule, occurs in fat women with slow pulses. In such cases thyroid extract would do good. In the other class of cases there is an increased secretion which occurs in nervous people, with fast pulse rates, etc. Here the thyroid extract does harm. Dr. Grandy has seen two rather remarkable cases occurring in women past the menopause, in both of whom hysterectomy had been performed for fibromyoma for several years previously. In one there appeared to be a malignant change in the thyroid. The other woman passed from observation. In both cases there was not enough thyroid secretion; one patient seemed to improve with thyroid extract; the other had some of the symptoms of myxedema.

DR. J. A. LICHTY, Pittsburg, Pa., agreed with Dr. Moffitt that it is a difficult thing to make a diagnosis when there are so few symptoms; and yet he knows of no disease in which an early diagnosis is so essential as in exophthalmic goiter. A great deal of harm may be done in a very short time if the disease is not recognized. There may be several so-called cardinal symptoms, but only these are necessary to make a diagnosis, i. e., rapid pulse, tremor and exophthalmos. If any two of these are present it is perfectly safe to place such a patient on treatment for exophthalmic goiter. If the patients are young girls, who are fond of dancing, bicycling, gymnastic work, etc., they should be warned of the danger and the harm that might result because of an existing exophthalmic goiter. These exercises should at once be forbidden. Dr. Lichty has tried the *x*-ray treatment without any benefit in these cases. During the past ten years he has cured two patients with the rest treatment. He emphasized the importance of an early diagnosis in exophthalmic goiter.

DR. CHRISTIAN JONSSON, Clinton, Iowa, said that young people seem to have a tendency to spontaneous recoveries, and that this disease seems to be more dangerous in old people. He has observed that thyroid gland treatment is extremely harmful in most of those cases, and it is his con-

viction that it should never be used in exophthalmic goiter. The treatment should consist in rest and freedom from worry, besides a tonic and sedative drugs, such as we have in a so-called sumbul tablet, containing iron, arsenic, sumbul, asafetida. In a number of cases this has given Dr. Jonsson surprisingly good results.

DR. HERBERT C. MOFFITT, San Francisco, declared that he did not agree with Dr. Walsh that cases of exophthalmic goiter in old people necessarily go wrong. He has seen not a few such patients kept comfortable by routine medical treatment, giving clinical evidence of further thyroid changes and slipping slowly from symptoms of exophthalmic goiter to those of myxedema. He mentioned one case in which stomach and intestinal symptoms were so marked that the affection was considered primarily a stomach one. After instituting the proper treatment the patient, a woman nearly 60, went along well, and is now showing signs of myxedema. The pulse rate is normal and the skin changes are those of myxedema. Dr. Moffitt is of the opinion, in the light of our present knowledge, that marked cases of exophthalmic goiter are helped but not cured by medical treatment, and that such patients should be referred to the surgeon.

REPORT OF COMMITTEE TO AID POSTOFFICE DEPARTMENT IN EXCLUDING OBJECTIONABLE ADVERTISING.*

C. S. N. HALLBERG, PH.G., M.D.
CHICAGO.
H. W. WILEY, M.D.
WASHINGTON, D. C.
AND
H. C. WOOD, JR., M.D.
PHILADELPHIA.

The following details concerning the work of the Postoffice Department, so far as it has involved the drug laboratory, present some of the problems which may be of interest:

THE ROBUSTO CASE.

All members of this Section are probably familiar with the "Robusto" case, full details of which were published in a recent number of THE JOURNAL A. M. A. In that report is clearly set forth the ignorance and stupidity of the promoter and the fraudulent nature of the advertisements. One statement in the advertisements is "there is no disease which Robusto will not cure." The would-be patient was led to believe that he was to receive medicines which were progressively increased in strength as the time of treatment continued. It was clearly shown on the witness stand that no such system was in vogue at any time by the promoter. In the case of "Robusto," there was at no time any question relative to the efficacy of the medicines employed, but the gross misrepresentations were abundant on every hand. This case presented numerous problems that we are confronted with in the case of many remedies of a similar character, but each one presents new problems to solve. For example, one promoter will claim that his remedies are new, were invented by him, are applied in a novel way, or that particular combinations produced wonderful results. The most difficult cases we have to deal with, however, are those involving results obtained by electrical appliances. It is very well known that electricity is a valuable agent in assisting in bringing about cures, but just to what extent this can be accomplished is at present largely an uncertain quantity.

* Read in the Section on Pharmacology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

OTHER SIMILAR CASES.

A few more cases similar in character, may serve to illustrate.

Dr. Stevens & Co. presented a host of medicines, largely in the form of crayons, with the contention that they were novel, in that the medicinal agent was applied directly to the affected part and in this way brought about wonderful effects. This firm also claimed that they were the originators of murituama, protargol and hyoscin bromid. One of the extremely interesting tactics of this firm was the sending of a strip of "medicated paper," advising the patient to dip the same in his urine and to return it to the company, and from it the company would make a diagnosis and inform the patient relative to the nature and seriousness of his condition. The strip of "medicated paper" proved to be nothing but litmus paper. It is almost beyond conception that a medical man, for there were medical men connected with this company, would stoop to such a downright misrepresentation.

Another firm claims to be able to cure almost all the ills that the flesh of man is heir to by a simple purgative consisting of powdered mandrake, powdered aloes, powdered capsicum and spearmint.

The Force of Life Chemical Co. claims to restore "lost manhood" and "lost vitality" by a progressive treatment consisting of a liquid containing as its chief constituent lecithin, which is present, but an examination of the remedy shows that all the packages are virtually of the same composition. This company claims to cure many infirmities by what is called by them "radium capsules." These capsules are found on examination to be free from radium.

Another great fraud met with is "aquamiel," a product claimed to be made from a Mexican plant, possessing most marvelous healing properties, and in particular stimulating the growth of the mammary gland. An examination of this product showed that it consisted of two strengths, one containing 2 per cent. of alcohol and the other 8 per cent., with 0.5 per cent. of plant extractive, the liquid being colored with caramel and sweetened with saccharin.

A Detroit firm submitted many medicinal agents, among which was a tablet consisting of capsicum, which, according to directions, was to be dissolved in water and applied to the organ as necessity required.

A product called "predigested olive oil" was also met with. The olive oil, however, was not predigested.

"Cupidene" consisted largely of red pepper, cantharides and a bitter principle.

"Ambaline" consisted for the most part of different ammoniacal salts dissolved in water.

"Liquid electricity" was another catchy term. The active constituent of this preparation consisted largely of red pepper, ammoniacal salts and volatile oils in an aqueous solution.

COMPLEXION POWDERS.

We also have to report on complexion powders and complexion tablets. One complexion powder consisted wholly of Rochelle salts. A complexion tablet consisted of extract of nux vomica, calcium carbonate and reduced iron. The unfortunate part connected with this remedy is that its promiscuous distribution was the cause of the death of a child. This was brought about by the present possibility of transmitting remedies of this character through the mails without requiring them to be marked

in any way so as to inform the recipients of their poisonous nature.

RULING OF THE POSTOFFICE DEPARTMENT.

For some time, it was ruled by the Postoffice Department that the transmission of poisons through the mail was prohibited. It appears pressure was brought to bear on certain officials, and as a result the following ruling was put in effect:

"Proprietary articles of merchandise, not in themselves unmailable, such as fancy soaps, tobacco, pills, tablets or other preparations such as are used by the medical and pharmaceutical professions, put up in fixed quantities by the manufacturer, for sale by himself and others, which may be sealed in such manner as to properly protect the articles, but to allow examination of such package in its simplest mercantile form, will be accepted for mailing; provided, that poisonous articles, or articles containing poison, and not unmailable, shall be accepted for mailing only when the package bears the label or superscription of the manufacturer of or dealer in the article mailed."

Under this ruling, it is possible to send any poison through the mail provided it is used by the medical and pharmaceutical profession and is put up by a physician or pharmacist in fixed quantities for sale by himself or others. It seems that it would be well to call the attention of the postoffice authorities to this matter and inform them it is the law in almost all states that poisonous remedies of the above character must be marked with poison labels indicating their dangerous character. Of course, it probably would be unjust to withdraw the privileges of the mail entirely from remedies of the above character, but the public ought to be protected in some way by suitable labeling at least.

"Skin-bleachers" have also received some consideration at our hands. The active constituents of these preparations consist for the most part of corrosive sublimate mixed with such articles as glycerin, tincture of benzoin and water. The effect of such a mixture is well known to all physicians. It is claimed by the promoters that they are able by the use of these mixtures to turn a black skin white.

The colored race comes in for an additional "soaking" by firms who claim to make curly hair straight by ordinary ointments and oils.

OTHER FRAUDULENT REMEDIES.

One of the most interesting fraudulent remedies claiming to restore "lost vitality" is "Yousouf's celebrated Turkish salve," which an analysis showed to be nothing but a preparation of petroleum containing approximately 20 per cent. of beeswax.

The action of methylene blue is taken advantage of in many cases, and one firm claimed that if the patient would forward a colored "medicated cloth" (which proved on examination to be nothing but cheese cloth), after moistening the same with his urine, they would submit the colored cloth to an examination and report the nature of the disease to the patient.

INTERPRETATION OF THE LAW.

We wish to call attention to several different points that have been encountered and which at present can not be acted on, first, because of the marked division of opinion among the medical profession, and, second, because of the present construction placed on the law governing the use of the mails by the Department of Justice.

The first point is illustrated by a specific case involving a solution containing a very minute quantity of an organic copper salt, glycerin, phosphates, and, the manufacturer claimed, heroin, which could not be found. The greatest value of this remedy, it was claimed, resided in the very small percentage of copper it contained, which, it was held out by the manufacturer, was a remarkable cure for consumption. An investigation among the best medical authorities showed that they were all ignorant regarding the usefulness of an organic copper salt in the cure of this disease. Literature, however, showed that a number of remarkable cures had been effected by several French physicians, and there was nothing to do but to give the manufacturer the benefit of the doubt and permit him to continue his practice.

Attention is called to the fact that there are at present many remedies that are highly fraudulent and which are relieving the poor people of much of their hard-earned money. The concerns manufacturing these, however, can not be successfully attacked because they have transacted their business in such a way as to come within the rulings of the Department of Justice in the distribution of their remedies.

This ruling is somewhat as follows:

"The privilege of the mail can be withdrawn from parties only when they are using the mail for the distribution of their goods or the reception of money directly from their patients, or both."

There are many that are taking advantage of this situation, chief among which is that much-advertised and highly deceptive product known as "Liquozone."

It might be well to consider the desirability of placing these conditions before our legislators, but the chief difficulty is the point made by certain government officials that many of our senators and representatives are using remedies of this character in their own homes and believe that they have merits.

It would be a gracious thing on the part of the American Medical Association to encourage the Postmaster-General and the Secretary of Agriculture in prosecuting this line of work and to inform them of hearty support and the full co-operation of the Association.

It is difficult to say approximately what amount of money has been thrown into proper channels by withdrawing the privileges of the mails from many dishonorable concerns during the past two years. This, of course, has brought some ill feeling on the part of certain manufacturers who are recognized as of good standing, some of whom have come out and declared that these firms to whom they were supplying goods were legitimate and honorable, and that they could see no reason why they should be interfered with in any way.

THE INFLUENCE OF SACCHARIN ON THE DIGESTIVE ENZYMES.

S. A. MATHEWS AND HUGH McGUIGAN.
CHICAGO.

Saccharin is of interest both from physiologic and economic points of view. Its extensive use as a sweetening agent in canned fruits and vegetables, in syrups, chewing gums, confections, etc., makes it of general dietetic importance. It is also a very common ingredient of lotions, especially of mouth washes. Its use in the diet of diabetics, where sugar can not be tolerated, gives it some importance in medical dietetics. The fact that the food laws of many states prohibit its indiscriminate use, and consider it more or less as a harm-

ful adulterant, makes it incumbent on the pharmacologist to investigate its action on the body; the purpose of the investigation being to find out whether or not it exerts a deleterious influence.

CHEMISTRY AND PROPERTIES OF SACCHARIN.

Saccharin is the imido derivative of ortho-sulphobenzoic acid and is represented by the following formula:

$$C_6H_4 <^{SO_2}_{CO}> NH.$$

It dissolves with difficulty in cold water and slightly more in hot water. Its sodium salt is readily soluble in water at all temperatures. Saccharin possesses an extremely sweet taste, given usually at from 300 to 500 times as sweet as cane sugar. It is this characteristic sweet taste that makes its use so widespread. Most commercial manufacturers of the substance make much of this point in advertising their product.

For the detection of saccharin it is extracted with ether, or with a mixture of ether and light petroleum spirit. After evaporation of the solvent the intense sweet taste is characteristic. As a confirmatory test a part of the residue is treated with concentrated KOH or NaOH and the dish heated until the mass fuses and is maintained thus for about half an hour. By this means the saccharin is converted into salicylic acid. This can be recognized by its crystalline form, melting point and reaction with ferric chlorid. The reactions on fusing can be represented thus:

$$\text{I. } C_6H_4 <^{SO_2}_{CO}> NH + 2H_2O \longrightarrow C_6H_4 <^{SO_2OH}_{COOH} + NH_3$$

$$\text{II. } C_6H_4(SO_3)COOH + 2KOH \longrightarrow C_6H_4(OK)COOK + H_2SO_3 + H_2O$$

On acidifying and extracting with ether, free salicylic acid is liberated from the salt. If salicylic acid is formed in this way outside the body, we thought there was a probability of its formation within the body. It is well known that many reactions which require high heat and the aid of strong acids or alkalies outside the body can take place readily when subjected to the energy of the body cells. On the other hand, benzol compounds in general leave the body in other well known forms. In our experiments, which are given below, we found that not a trace of salicylic acid was formed and that saccharin left the body entirely unchanged.

METHOD OF DETERMINING THE CONDITION IN WHICH SACCHARIN LEAVES THE BODY.

A solution of saccharin (garantose) was prepared by dissolving a known amount in water, by the aid of sodium carbonate. Just sufficient carbonate was used to dissolve the garantose and at the same time keep the reaction of the solution neutral, or very slightly alkaline. The solution was made to a known volume and injected slowly into the femoral vein of a dog. It was allowed to remain in the circulation from two to six hours, and then was washed out through the kidneys with a diuretic —M_8 Na_2 SO_4. The urine was collected from the ureters, and the amount of saccharin determined by converting it into salicylic acid. By this method we found that when we used from .25 grm. to .5 grm. garantose we could obtain 90 to 95 per cent. of the theoretical amount of salicylic acid in the urine. As commercial saccharin is not chemically pure it is necessary as a control to determine the amount of salicylic acid it will yield. The amount of the diuretic necessary to wash out all, or practically all of the saccharin can be approximately determined by taste. When about 150-200 cc. of the solution of urine and diuretic has been collected from the ureters, the fluid is practically all Na_2 So_4, and fails to give the test for saccharin. It is then made to a known volume and aliquot-portions used in the analysis.

ACTION ON THE BLOOD.

A neutral solution, prepared as above, and containing .25 grm. was injected into the femoral vein. After two hours some blood was withdrawn and its action on hydrogen peroxid tested. Normal blood from the same animal was used as a control. The results are as follows:

I.	II.
2 c.c. blood (sacch.)	2 c.c. Blood (normal).
10 c.c. water.	
2 c.c. H_2O_2.	10 c.c. water.
Gas given off in 30 minutes:	2 c.c. H_2O_2.
12 c.c.	13.5 c.c.
Gas in 2 hours:	
14 c.c.	14.0 c.c.

The only action here is a slight retardation of the oxidation.

In a second experiment normal blood was taken from the carotid artery and dry saccharin added to it.

I.	II.
2 c.c. blood.	2 c.c. blood.
0.1 gm. sacch.	3 c.c. H_2O_2.
3 c.c. H_2O_2.	
Gas in 10 minutes:	
18 c.c.	27 c.c.

Here the larger amount of saccharin causes a marked diminution in the oxidative power. On standing a longer time only a slight change was found in the relative and absolute volumes given in the table.

ACTION ON THE OXIDATION OF SUGAR IN THE BLOOD.

Every animal can oxidize a certain amount of a monosaccharid if it is injected directly into the circulation. The total amount that can be oxidized before sugar appears in the urine can be called the oxidizing coefficient of the animal. This amount will, of course, vary with different sugars, depending on the ease with which the sugar can be oxidized. In other work one of us (McGuigan) found that levulose is very much easier oxidized than any of the other common sugars. Consequently in this work we started with levulose. If the oxidizing power of the animal is lessened by the injection of saccharin—a fact which we have shown fully—then less sugar can be oxidized by an animal with saccharin in its blood than can be oxidized by a normal animal. To test this point we selected two dogs of about equal size and age. Dog 1 was used as a control. A solution containing 15 grms. levulose and 1 grm. sodium bicarbonate made to 500 cc., was injected into the femoral vein at the rate of 10 cc. every 5 minutes. Sugar commenced to appear in the urine when 250 cc. had run in. No sugar appeared before this time. The same strength of sugar solution with the addition of 2 grms. of garantose to 750 cc. of the solution, was run into the femoral vein of Dog 2 at the same rate as in Dog 1. Sugar appeared in the urine in this case when 140 cc. had been injected. If we assume that the dogs possessed the same oxidizing power, then clearly the addition of garantose materially lessens the oxidative power. This is corroborated by the rest of our work and is strikingly brought out by the work of Bornstein [1] We are aware that most diuretic salts and many anesthetics will produce a condition of glycosuria, and have been careful to avoid the use of such. In all this work chloretone was used as the anesthetic. In this last experiment no diuretic was used.

1. Zeit. für klinische Medicin, vol. 40 p. 208. This reference also contains a résumé of the literature of the work on saccharin.

INFLUENCE OF SACCHARIN ON THE FERMENTATION OF SUGAR.

The urine containing levulose from the above experiments did not ferment with yeast. A solution of pure levulose was then tried and it fermented rapidly. If, however, a slight amount of saccharin was added, fermentation was entirely inhibited. Garantose is only slightly soluble in water; it is yet sufficiently soluble to prevent fermentation. This point is worthy of consideration in diabetic diets.

INFLUENCE ON THE WORKING OF SALIVA.

The influence of saccharin on the diastatic action of saliva is more pronounced than on any other enzyme of the body. Even traces exert an enormous retarding influence, while larger quantities completely arrest the action of the enzyme. This is shown by the following experiments:

	I	II	III	IV	V
Dry sacch. grms.	.2	.1	.05	.01	0
Saliva, c.c.	2	2	2	2	2
Starch paste, 2 per cent., c.c.	5	5	5	5	5

The solutions were mixed in vitro and placed in a thermostat at 40 degrees C. The results were as follows:

V—All digested in 8 minutes.
IV—All digested in 16 minutes.
III—All digested in 40 minutes.
II—Only trace digested in 360 minutes.
I—No digestion in 360 minutes.

The point when digestion was completed was indicated by the iodin test. No digestion was shown by failure to reduce Fehling's solution.

ACTION ON PEPTIC DIGESTION.

A 1 per cent. neutral solution of saccharin was prepared and the following experiments carried out:

	I	II	III	IV	V	VI
Pepsin, 2 per cent. acid reaction, c.c.	4	4	4	4	4	4
Sacch. sol., c.c.	5	4	3	2	1	0
Water, c.c.	1	2	3	4	5	6
Fibrin, grms.	2	2	2	2	2	2

The above were shaken in test tubes and placed in the thermostat at 40 degrees. Results:

VI—All digested in 45 minutes.
V—All digested in 60 minutes.
IV—All digested in 85 minutes.
III—All digested in 100 minutes.
II—All digested in 130 minutes.
I—All digested in 350 minutes.

The retarding influence here is very apparent.

ACTION ON TRYPTIC DIGESTION.

Experiments were carried out with commercial pancreatin; with fresh pancreatic extracts and with pancreatic extract mixed with extract of the duodenum (dog). The proteolytic action of pancreatin and extract of the pancreas alone was only slightly affected by the addition of small amounts of saccharin. The diastatic action is materially decreased by the addition of saccharin, though not to so great an extent as the diastatic action of saliva. The most striking results are obtained when extract of the pancreas and duodenum are mixed.

An extract of the pancreas and duodenum of a dog was prepared by grinding the organs to a pulp and macerating 30 minutes with a 5 per cent. Na_2CO_3 solution. The extract was then filtered and added to fibrin as follows:

	I	II	III	IV	V
Filtered ext., c.c.	5	5	5	5	5
Sacch. dry grms.	.1	.05	.02	.01	0
Fibrin, grms.	1	1	1	1	1

The mixtures were placed in the thermostat at 40 degrees C. and observed at short intervals, with results as follows:

V—All digested in 45 minutes.
IV—All digested in 105 minutes.
III—Almost digested in 270 minutes.
II—About half digested in 270 minutes.
I—Practically no digestion in 270 minutes.

No observations were made again for twelve hours, when the same condition was found as at the end of 270 minutes. These results indicate clearly enough the inhibitory action of the substance on pancreatic digestion.

ACTION ON THE OXIDATIVE POWERS OF MUSCLES AND GLANDS.

The muscular and glandular tissues of the body will all liberate oxygen from hydrogen peroxid. The amount of oxygen liberated by a given amount of the dried tissue is roughly proportional to its oxidative powers. If saccharin is added, the oxidation is lessened; if sufficiently large amounts are added, the oxidative power is entirely overcome. This influence is illustrated by the following experiments:

The tissues were prepared by grinding the fresh material to a fine pulp and macerating in 95 per cent. alcohol for 24 hours. It was then filtered, washed with alcohol and ether and dried in the air. After drying it was ground very fine and run through a fine sieve. The first experiment was with rabbit's muscle, 2 grms. in each:

	I	II	III	IV
Dry sacch., grams	.1	.05	.01	0
Water, c.c.	5	5	5	5
H_2O_2, c.c.	2	2	2	2
C.c. gas in 5 minutes	0	0	.8	2.5
C.c. gas in 10 minutes	0	0	1.5	3.4
C.c. gas in 30 minutes	0	0	2.0	5.5
C.c. gas in 60 minutes	0	0	2.2	5.8

In a second experiment rabbit's liver was prepared in the same way; using .2 gms. gave the following results:

	I	II	III	IV	V
Saccharin, grams	.2	.1	.05	.01	0
Water, c.c.	5	5	5	5	5
H_2O_2	2	2	2	2	2
Gas in 5 minutes	0	0	2	4.5	12.0
Gas in 10 minutes	0	1.5	3.0	6.0	15.0
Gas in 30 minutes	0	2.5	3.8	8.0	17.2
Gas in 45 minutes	2	2.6	4.8	9.6	18.0
Gas in 60 minutes	2	3.0	6.5	12.4	19.0

In Experiment 3, dog's muscle and liver were treated in the same manner, with the following results:

DOG'S LIVER, TWO-TENTHS GRAM IN EACH.

	1	II	III	IV
Sacch., grams	.1	.05	.01	0
Water, c.c.	5	5	5	5
H_2O_2, c.c.	2	2	2	2
Gas in 5 minutes	0	0	1.5	4.0
Gas in 10 minutes	0	0	2.3	5.5
Gas in 20 minutes	0	.5	4.0	8.5
Gas in 40 minutes	0	1.0	5.2	9.5
Gas in 60 minutes	0	1.8	6.8	9.6

DOG'S MUSCLE, TWO-TENTHS GRAM IN EACH.

	I	II	III	IV
Sacch., grams	.1	.05	.01	0
Water	5	5	5	5
H_2O_2	2	2	2	2
C.c. gas in 5 minutes	0	0	1	2
C.c. gas in 15 minutes	0	0	1.5	2.5
C.c. gas in 30 minutes	0	0	2.0	3.0
C.c. gas in 45 minutes	0	0	2.5	3.5

From these results it is evident that saccharin in small amounts retards oxidation, and in larger amounts prevents oxidation both in herbivorous and carnivorous animals. These results agree fully with those of Bornstein,[1] who found that the administration of saccharin caused an increased elimination of total nitrogen. The amount of nitrogen in the urine was less than before the using of saccharin, but the amount in the feces was greatly increased, so that the average of the two was greater than before using it. This means either a decreased hydrolysis or a decreased absorption of proteid, or both. As a matter of fact, Bornstein proved that absorption was materially lessened by the use of sac-

charin. He also observed that on those days in which he used it he suffered from headache and other symptoms of gastrointestinal derangement.

The experiments recorded above confirm the work of Reigler,[2] although it seems that we noted a more powerful action than that reported by him. This is undoubtedly due to the using of different brands of saccharin. In our work we used the "garantose" handled by Merck & Co. Reigler used that manufactured by Fahlberg, List & Co. The commercial products vary in strength, and to obtain uniform quantitative results a chemically pure preparation must be used.

PHARMACOLOGY OF SACCHARIN.

Saccharin is used in medicine solely on account of its sweetening properties. As we have shown, it has a retarding influence on the action of the digestive juices, especially that of the saliva and pancreas. Its prolonged use would, therefore, tend to produce digestive disorders. When injected into the circulation of an animal it produces depression and stupor, followed by labored respiration similar to asphyxia. This is evidently due to its inhibitory action on the enzymes in the blood and also in the tissues in general. This action very probably accounts for the headache and other symptoms which follow its use. Like many of the other benzol compounds, it may be considered a general protoplasmic poison, in that it inhibits nearly all the fermentative processes of the body. Consequently it interferes with and decreases the general body metabolism.

LEPROSY, BLASTOMYCOSIS, LUPUS, SYPHILIS, ALOPECIA AREATA, LUPOID SYCOSIS.*

JAMES NEVINS HYDE, M.D.
Professor of Diseases of the Skin, Rush Medical College.
CHICAGO.

LEPRA TUBEROSA.

CASE 1.—J. G., male, aged 20, a native of Russia, came to this country six years ago, and has since that date lived in one of the western states contiguous to Illinois.

History.—Three years ago he began to suffer from a series of febrile attacks, accompanied by chills and by eruptive symptoms of an erythematous type, which were supposed to be syphilitic in character and for which he was subjected, without remedial results, to a course of specific treatment. Aside from the symptoms referred to, he has enjoyed fair health. There is no history of venereal disease; he has occasionally indulged in tobacco smoking; his family record is good. His father, who accompanies him, is a healthy-looking, though somewhat undersized, Polish Jew.

Examination.—The face of the patient is seen to be the seat of a diffuse infiltration, chiefly conspicuous about the nares, the brows, the lips, and the ears. The infiltrated area, though diffuse, is studded here and there with smaller and larger tubercles. There is marked alopecia of the brows. On the forearms, hands, legs, and the dorsum of the feet, there are larger and smaller poorly defined areas of punctate pigmentation; and here, as also where no such coloration exists, there are areas distinctly insensitive to hot and cold applications and to the prick of a pin. On the extensor surface of the left wrist is a large, coin-sized keloid developed from a burn which, he states, at the time of its infliction, produced no pain. The ulnar nerves are enlarged and somewhat corded, but the ascending great auricular nerve is not involved. This special nerve is said to be implicated in nearly 90 per cent. of similar cases, and its induration is readily demonstrated in the patient whom I shall next present to you. There is a deep, funnel-shaped ulcer in the sole of the left foot corresponding in character with the symptoms of *mal perforant du pied*. This young man has had frequent attacks of epistaxis. The mucous membrane of the nasal cavity is studded with small pin-head-sized and larger tubercles and irregular, shallow ulcers, thus explaining largely the catarrhal symptoms of which he complains.

This patient was first examined on Dec. 4, 1904, at which time a small nodule was excised for examination. The section when stained exhibited numerous lepra bacilli and the same micro-organisms were thickly dispersed in a smear of the nasal secretion.

Points of Special Interest.—Though presenting typical and unmistakable symptoms of tubercular leprosy, with an admixture of lesions commonly found in anesthetic types of that disease, this patient presents several points of special interest.

His youth and the relatively brief period of time during which he has suffered from the disease may be named first in order. These promised well if an appropriate therapy were instituted. He was placed on chaulmoogra oil, beginning with five minims in a glass of milk administered three times daily, the dose being progressively increased to nearly a teaspoonful. With this were administered ferruginous tonics; and a carefully directed hygiene was insured.

The results have surprised all who have watched the progress of the case. The general appearance and health of the patient have greatly improved. The skin is fairer, less muddy, less infiltrated. Over the brows the tubercles are now scarcely evident. The catarrhal symptoms are less severe. The only feature of his case in which there has not been corresponding improvement is the plantar ulcer. This we shall treat surgically.

Second: The origin of the disease. The youth almost certainly contracted leprosy in Russia. Instances of this malady, originating in the United States, are, indeed, few. My colleague, Dr. Ormsby, has reported one such case, the patient having been exhibited to this clinic last year. In his published report of this case, Dr. Ormsby makes reference to the case of the child of a leprous patient presented by me before this clinic several years ago, in which it seemed highly probable that the child, a native American, contracted the disease, presumably from the father, in the state of Nebraska.

Third: The demonstration of lepra bacilli in great numbers in the nasal secretion would seem to argue in favor of the opinion long sustained by Dr. Morrow, of New York, that most cases of leprosy are contracted by the medium of nasal secretions. It should be added, however, that in most of the leproseria visited by me the organs, apart from the skin and viscera, most frequently involved were without question the eyes. The number of blind lepers in any asylum devoted to this class of patients is pitifully large.

CASE 2.—This patient, F. B., aged 27 years, a native of Australia, left his home seven years ago to become a sailor.

History.—In the course of his voyages he has visited Ceylon, India, Norway, Sweden, China, and the West Indies, and has lived an irregular sexual life in all these countries. At one time he was associated with a bunk-mate supposed to have the same disease and with whom he occasionally exchanged clothing. It appears, however, that before he left Australia an odd-looking "patch" appeared on his back, which may possibly have been the first symptoms of the disease with which he is now affected. There is a leper asylum in the vicinity of his native town. His history, prior to the development of the present disease, is not significant. His parents are healthy and free from symptoms of his ailment. The tip of the left index finger has been removed as the result of a traumatism. His functions are regularly performed.

Examination.—At the present time, the dorsum of the trunk is seen to be symmetrically, though irregularly, overspread with circular and ovoid patches having a faintly erythematous central area surrounded by annular bands from one to two centimeters in width, pigmented in yellowish-brown shades. There are about a score of these visible, varying in size from the section of a hen's egg to the palm of a hand; some of them are insensitive to both superficial irritation and to cold and heat. There are other areas of anesthesia where the pigmentation and color changes are absent, as, for example, about the popliteal spaces, but more particularly over the posterior

2. Archiv. für Exp. Path. u. Pharmacologie, vol. 35, p. 306.

* A clinical lecture delivered before the Visiting Alumni of Rush Medical College at the Commencement of 1905.

aspect of each forearm from the elbow to the ulnar side of the hands as far as the digital borders. The anterior surfaces of the thighs and the left patellar region are equally insensitive. The nerve trunks in both arms are corded and tumid; the great auricular nerve (as explained in the case of the patient previously presented) is distinctly thickened and indurated. There are a few pea-sized nodules, subcutaneous in situation, discernible in the skin of the forehead. Here, however, as in the skin covering the temples, the ears, and the alæ of the nose, the integument is more or less evenly infiltrated. Making allowance for the characteristic color of the skin of the native Maori, the hue is of a deep mahogany shade and glistens as if artificially oiled. The expression of the countenance is characteristically dejected. The reflexes are exaggerated; the mucous membranes apparently are not involved.

This leprous patient first applied for treatment at the clinic in February, 1903, and since then at regular intervals has been under our observation. Lepra bacilli were readily recognized in sections of tissue; the diagnosis was thus assured. His disorder is predominantly of the anesthetic type.

Treatment.—His improvement during the first year was pronounced and in a high degree satisfactory. The treatment pursued was largely hygienic and by the administration of tonics. For the last year, however, during which time he has been absent from the city, he has manifestly deteriorated in health. The leonine facies of lepra is becoming pronounced; he suffers from vague pains; is somewhat cachectic and has lost flesh. It is a source of regret that he was not placed at once on the chaulmoogra oil, which we purpose now to administer in the largest tolerated dose, as in the case of the patient last examined.[1]

BLASTOMYCOSIS.

CASE 3.—W. K., a Lithuanian, aged 34, male, laborer, weighing 160 pounds, married but childless, has a fairly good family history. Three brothers and one sister are living, in good health; two sisters are dead of some disease unknown.

History.—He has suffered for one year from a lesion somewhat below the left popliteal space. This lesion is an irregularly oval ulcer, 4½ by 2½ inches in dimensions, with its long axis at right angles to that of the limbs. This is a typical blastomycotic patch, the presence of innumerable blastomycetes having been demonstrated with the microscope. The organisms are now growing in cultures of several generations. As the peculiarities of these lesions have been made the subject of a vast amount of description and illustration, I shall content myself with pointing out the chief peculiarities here visible, merely adding that none of the pictorial representations of the disease as it affects the skin is more classical in its features than the patch now before you.

The surface is beset with irregularly massed verrucous and papilliform projections, uniformly elevated, and no part markedly projected above the general level of elevation. The edge of the patch is formed by a raised ridge, sloping gradually to the surrounding sound skin, the outer surface of this sloping border being thickly beset with exceedingly minute typical abscesses containing, when explored with due precautions, pure cultures of double contoured organisms, each having a central or laterally placed vacuole, and all showing budding outgrowths, the daughter organisms being both smaller than, and in cases as large as, the mother body. In general, the exposed surface is hemorrhagic, bleeds readily on gentle friction, and here and there is slightly crusted from desiccation of the purulent secretion it furnishes, though as the dressings have been removed prior to bringing the patient into the arena, the general aspect of the patch as we now see it is florid.

General Discussion of the Disease.—This disorder has been named the "Chicago disease," for the reason that more cases have been reported in this city than in any other of the world, though the first studies of the malady were made in patients observed by Busche and Buske in Germany and by Gilchrist in Baltimore. The scientific men of Chicago, and of other American cities as well, have diligently but vainly sought the reason for the enormous preponderance of the disease in this city.

One of the most significant and imperative of the questions which have arisen in this connection relates to the fatality which has of late befallen the victims in these Chicago cases, now numbering more than forty in this city alone. The first instance reported by us justified the name originally given to the disease by Gilchrist, of Baltimore, viz., "blastomycetic dermatitis." But the occurrence, under our observation, of cases in which not merely the skin, but also the viscera were involved, cases, in fact, in which the skin was secondarily attacked after organisms plainly had been demonstrated as of earlier origin in the liver, spleen, or kidneys, cases going on to a fatal termination, and in which, even after a first cutaneous expression of the malady, there was later systemic infection, revealed the subject in an entirely novel light. They presented for solution a new problem. Were these cases in any way related to those recognized by our colleagues in California and described by them under the titles, "protozoic infection," "coccidioidal infection," etc.? In all the California patients there had been a fatal issue; but the organisms in the human body in these sufferers never formed buds, but invariably reproduced by sporulation. We are now closely watching two subjects of the disease in whom there are symptoms pointing to a speedily fatal issue; one of these cases, for the first time in our experience, occurred in private practice.

The originally highly vaunted treatment of blastomycosis, by the administration of iodid of potassium internally, is without question of value. That this drug possesses an inhibitory influence on the evolution of the organism and at times completely suffices to destroy its activity can not be questioned. A few patients, without doubt, have been thus relieved. In many others, and in those cases resulting fatally, the medication has proved of temporary value only. In some of the fatal cases, intercurrent disorders, tuberculosis more particularly, has been responsible for the issue. The study of these phenomena is as yet in its infancy.

TWO CASES OF ERYTHEMATOUS LUPUS.

CASES 4 AND 5.—Of the two women now presented, one aged 35, is married and has suffered from a facial disease for two years; the other, unmarried, aged 29, has presented symptoms of the same affection for sixteen years.

Development of the Lesions.—In the first instance, the lesions have developed from a single patch on the left temple, which at first was a reddish disc, slightly elevated, scale-covered, and never discharging. Gradually over the bridge of the nose, the scalp, the cheeks, and in a less degree over the upper chest, similar roundish, flattened, scale-covered discs have developed. Those on the scalp have resulted in distinct depressions of the surface without complete loss of hair in the atrophic areas. In the case of the younger woman, similar roundish, scale-covered discs are exhibited over the face and also within the left ear between the tragus and the antitragus. A few smaller but similar discs are visible near the border of the scalp on the forehead. Both patients, treated by my associate, Dr. Quinn, have been greatly improved by radiotherapy and the use of the Pick jelly, which can be highly praised as a local application in the lesions of this character.

Remarks.—These are typical illustrations of erythematous lupus, a disease which has never yet been identified with tuberculosis of the skin, seeing that very rarely have tubercle bacilli been recognized in the tissue. Yet lupus erythematosus is a disease in which, as the French long have taught, curious, and in certain groups of observations, remarkably close relations are sustained by it toward tuberculosis. There are few clinicians of experience who have not seen generalized tuberculosis develop as a sequel of lupus erythematosus; and in other instances the two affections have unmistakably coexisted. In yet others absolutely no proof of tuberculosis of the skin or other organs can be adduced when lupus erythematosus has developed with classical symptoms. The common-sense view of these questions suggests that both in tuberculosis of the skin and in other conditions in which from any cause a diminution has been wrought in the resistance power of the economy, the skin undergoes this singular metamorphosis. Hutchinson and other English writers have laid stress on the fact of the frequency of these lesions in faces that have been much exposed to the weather; indeed, at times in those which have been wholly, or in part, frozen. Certainly it is significant that in most instances of the affection, first, the face, which is pre-eminently

exposed to vicissitudes of the weather, is most often involved (cases of generalized erythematous lupus with grave symptoms are exceedingly rare); second, the face is affected rarely in infancy and childhood, but most often when the maturity of the body is nearly attained; in other words, when the face is, in its early experiences, most exposed to out-of-door accidents; third, women in slight preponderance with the delicate skin of the face unprotected by a beard, are somewhat more often disfigured in this way than men.

The old method of attempting to remove these patches by caustic treatment has been generally, though not wholly, abandoned. It has been asserted that radiotherapy, in these instances, is without value, but a great error is involved in such an assertion. Many of the discs wonderfully improve under judicious exposure to the *x*-rays; and in all cases a protective treatment accomplishes more in the way of cosmetic effects than any caustic method hitherto devised.

VERRUCÆ ACUMINATÆ OF THE ANUS.

CASE 6.—This lad, aged 15, has indurated and enlarged inguinal, postcervical, and epitrochlear glands, the relics of a fading syphilitic exanthem over the skin of his body, and gives a history of recent patches in the mouth.

Examination.—Two months ago he noticed a soreness about the anus, and then the lesions now exposed to view were recognized. These increased in size with great rapidity. When carefully inspected, it is seen that a group of venereal warts surrounds the verge of the anus, the entire mass being as large as a butternut, the individual warts being tufted, florid, secreting a thin, offensively smelling mucopus. As usual in similar instances, the warts are pointed, and in appearance resemble the comb of a cock.

I call special attention to the infundibuliform shape of this anus, the orifice of which, instead of being, as should be expected in so young a subject, neatly closed by the aid of the sphincter, is readily made sufficiently patent to admit a large thumb.

Remarks.—To the credit of the class of persons annually frequenting this clinic, it can be stated that this is one of the rarest of observations made in this ampitheater. I can not recall a similar instance in many years. The patency of the anus here is due to unnatural practices with a person of the same sex as the patient. The French, who have had a large experience of similar cases, call attention to this striking feature of the infundibuliform anus; and attention is directed to it here for the purpose of placing on guard every practitioner confronted with a similar case. Chancres of the anus are often, though not invariably, produced in the same way, exception being made in the case of women, in whom, on account of the anatomic features of the anogenital region, such an accident may result from venereal, though not from unnatural, practices.

Verrucous lesions of this sort, whether syphilitic or blennorrhagic in origin, it should be noted, are especially frequent in the very young. The vulva of a nurse girl, 16 years of age, lately examined here, was quite obscured to the view by similar growths. She had been infected on the finger by a syphilitic child for whom she had been caring. Venereal warts of the progenital region in both sexes, are, however, seen also in the third and fourth decade of life, but the larger growths, springing rapidly to full evolution, most often originate in the second decade of life, and in girls more often than in boys.

TWO CASES OF ALOPECIA AREATA.

CASES 7 AND 8.—These two patients, both male, both married, each 30 years of age, exhibit circular areas of baldness on the skin of the scalp, the patches being well defined, free from evidences of inflammation of every sort, and destitute of scales, crusts, or other evidences of disease, save that the scalp in the denuded areas is of an unduly whitened color. The patient on the left has noticed his disease for two months; the other, on the right, has suffered for four months. Each gives a similar history, first of a loss of hair over limited area not larger than a small coin; later there was an enlargement of the affected patch, and the appearance of new spots equally denuded in other regions of the scalp. These are typically evolved instances of alopecia areata, a disease as old as the time of Celsus, whose name was first associated with its lesions.

General Discussion of the Disease.—The valuable researches of Sabouraud respecting the bacterial origin of the malady, the unquestioned occurrence of small epidemics of the affection where the evidences of contagion have been apparently irrefutable, and the general suggestiveness of the appearance of the victim of the disease, have strongly influenced a large number of scientific men to ascribe to it a parasitic origin. The arguments cited on the other side, that, viz., in favor of the neurotic origin of the malady, are numerous and not to be ignored. First, no typical evolution of such patches in sound individuals has resulted from intentional inoculation of pure cultures of the micro-organisms asserted to be the effective cause of the disease. Lesions, it is true, have been thus produced; but these fall short of betraying classical symptoms of alopecia areata. Second, a fact abundantly demonstrated in scores of cases exhibited in this clinic during the last few years, traumatism of the skull (blows, falls, etc.), have repeatedly brought about these losses of hair; and the same may be said of intense nervous strain, domestic grief, and grave exhaustion of the nervous centers. One of our recent patients, a child, was shocked by a scream that brought on temporary unconsciousness, the hair falling typically in due time after; in yet another instance, a boy who had suffered from classical symptoms of alopecia areata suffered from a lightning stroke which left him insensible and, according to the statement of his attendant, "black in the face" for twenty minutes. He had prompt return of the hair after the effective shock of the nervous centers.

In most of the clinical cases seen here, whatever the origin, antiparasitic treatment with scrupulous attention to the hygiene productive of value to the nervous centers, in the most cases, has set aside the chief danger, that, viz., of complete and remediless loss of all the hairy filaments of the body. The larger number of such incoercible cases occurs in private practice, the fact being possibly due, in the well-to-do classes of society, to the greater frequency of the stress and strain of modern life in large cities. The most important point in the forecasting of the future in these subjects concerns the age of the patient. After the thirty-fifth year of life, severe baldness of this type may be remediless.

Locally, we employ brisk stimulation of the bald surface, and, when the areas are not too large, gradual application to each of iodized phenol, creosote, and remedies of that class, always limiting the area attacked at a sitting to a few centimeters. We also employ with advantage the Finsen light, applied over small areas in successive sittings, so as to produce a characteristic reaction, as in the local management of lupus vulgaris. In all cases in which it is not contraindicated, there should be brisk friction of the body surface daily, not neglecting the spine, after cool salt-water sponging; a tonic treatment, both dietetic and medicinal; and relief from nervous strain.

LUPOID SYCOSIS.

CASE 9.—This patient, male, a fish-packer, married, aged 41, without a history of significance in connection with his present disorder, has suffered for nine years from a disease of the region of the beard which during the time named has been at times better and worse. He uses tobacco in moderation, both by smoking and chewing. The disorder first affected the left side of the chin, from which point it gradually extended until at present the entire bearded region is involved. The subjective sensations are those of itching and burning.

Examination.—On close inspection, it is clear that a somewhat active inflammatory process concerns the upper lip and the chin, which are evenly and symmetrically involved in a reddish infiltration dotted with minute pustules, each of which is pierced by a hair shorn in the process of shaving so as to leave for inspection a blackish stump at the apex of each pustule. The redness is due in general to a perifollicular halo about each hair-pouch, the proximity of each to its neighbors producing the general appearance of redness of the involved area.

This is the common picture of sycosis vulgaris, the absence of trichophytosis being demonstrable even without aid of the microscope, by the absence of bald areas in the bearded region, whence hairs have fallen in most well-defined instances of true "barbers' itch;" by the absence of the characteristic "lumpiness" of the affection last named (a feature due to the mass-

ing together of follicles invaded by the large-spored ringworm); and also by the general smoothness and symmetry of the lesions invading the chin and lips, a feature rather common in the usual type of sycosis vulgaris, that due to coccogenous invasion of the hair follicles. To this extent the symptoms presented are sufficiently common.

When the cheeks of this patient are examined, the picture presented is wholly different; in fact, the inexpert might be led to suppose that the disease in these parts differs from that which is actively invading the central portions of the bearded face. Here on the cheeks the redness is less distinct, the pustules are few, the tissues otherwise altered. The skin is thrown up into unsightly ridges; and between these, without appearance of arrangement in order, are sunken valleys, these last suggesting to the eye that the skin here is atrophied. The irregularly corded, ridged, and furrowed condition of the cheeks is one which is as characteristic of what is termed lupoid sycosis as are the phenomena recognized in the lips and chin of the ordinary vulgaris type.

Nor is this all. One rarely sees a distinctly developed and obstinate sycosis of lupoid type (Unna's *ulerythema sycosiforme*) without noting that the eyelids, as here, are the seat of a folliculitis, the hairs of the lids, especially of the lower lids, projecting from pouches distinctly involved in the same process as that visible in the actively progressing disease of the bearded region. The eyes are encircled, thus, with pinkish-tinted rims, a feature at first sight suggesting that the patient has granular lids; the symptoms, however, differ *in toto* from those of chronic conjunctivitis. These male patients, red-eyed and red-bearded, with chronic inflammation besetting the periphery of their hair follicles, present a complexus of symptoms that are especially interesting.

General Discussion of the Disease.—Here are some of the questions that arise in this connection:

Why do young male adults with the common symptoms of staphylococcic infection of the skin of the face, usually acute in type and readily relieved by appropriate treatment, not slide into conditions of sycosis in which the microscope only reveals staphylococcic and streptococcic invasion of their follicles? Why do pustular dermatites of the bearded region not invite attacks of sycosis? Why do most patients with the ordinary forms of sycosis vulgaris escape such severe manifestations as those displayed in the case of the patient before us? It is not easy to make scientific responses.

In the case of lupoid sycosis various hypotheses have been framed to explain the conditions present. By some it has been assumed that the disorder is simply a variety of lupus erythematosus affecting the region of the beard. An objection to such an inference is the fact that not rarely this part of the face is actually invaded with the occurrence of patches which then are distinctly characteristic of lupus erythematosus, and not at all similar to those of lupoid sycosis. It has also been claimed that the malady is one *sui generis*. In a few instances coming under our observation we have discovered the presence of tubercle bacilli. I am of opinion that the disease, in some cases at least, is one of the rare manifestations of tuberculosis in the skin.

Treatment.—The therapy of the skin in these cases is one that taxes to the utmost. No means at our disposal compare in value with radiotherapy. We shall treat the active symptoms in this patient with the usual shaving, shampooing, and application of the Wilkinson salve, containing sulphur, tar and green soap, at first in the strength of one part to ten of a simple unguent; later, if productive of good results, with the ointment in full strength. It is always needful in these cases to set aside the results of a catarrh, the secretion from the nasal passages in many cases lighting the disease afresh in the upper lip, whence it spreads. Tobacco usage is always prohibited; cold sponging of the body is regularly practiced; and bichlorid lotions regularly employed before the application of the pastes to the surface; these latter being always kept in contact with the affected face by means of lint spread with the remedy to be applied and bandaged over the part until improvement is demonstrated.

CASES ILLUSTRATIVE OF SYPHILIS.

I show you four patients, each exhibiting a different phase of the evolution of syphilis.

CASE 10.—Man, unmarried, aged 28, gives a history of a progenital sore a few weeks ago, the date being indeterminate.

Examination.—He now suffers from mucous patches of the mouth, general adenopathy, and a generalized papular exanthem, covering the entire body surface. The picture is one sufficiently common in all clinical experience. The absence of subjective sensations, the discrete papules of the kind described in the text-books as the "small papular syphiloderm" in groups, their distribution, color, and symmetry taken in connection with the non-cutaneous symptoms make the diagnosis relatively facile.

Appearance of Syphilitic Eruptions.—I call attention to the fact, not sufficiently emphasized, that by the color of an eruption alone, apart from other symptoms presented, it is not safe to distinguish the character of an exanthem. The color of a cutaneous eruption varies from hour to hour with the special condition of the patient; it is not the same in a brunette and a blonde; it is not equally tinted in the face, the lower extremity, and the anal region; it is unlike in the palm of an infant and over the buttocks of an aged man. When one hears it said that as soon as the color is seen the diagnosis became clear, a shadow of suspicion crosses the mind. Syphilis has been described as an "imitator" of other diseases; it would be, perhaps, nearer the truth to declare that many non-systemic affections of the skin resemble those induced by syphilis.

All said and done, however, taken in connection with the character of the lesions exhibited, the browns, the purples, and the deeper reddish hues—the combinations producing what has been described as the "color of raw ham"—are often conspicuously displayed in the skin lesions of lues.

CASE 11.—The next patient, a man, aged 45, has suffered from this disease for six years; and his symptoms are widely different from those presented in the younger patient just examined.

Examination.—The left leg is the seat of a circular, well-defined, clean-cut ulcer, with sloughy floor and purulent secretion; while here and there over the lower limbs, deeply pigmented circular patches of gummatous infiltration are displayed chiefly over the left lower extremity.

Remarks.—Between these two patients there is scarcely a point of close resemblance. Only the comparison of observations collected by many men during many years of experience has taught us the varying shades and pictures of the malady in multiform expression, at different periods of its curious career.

CASE 12.—A woman, married, aged 28, complains of eruptive symptoms involving the face and hands.

Examination.—Here are symmetrical groups of papules, which do not itch, which have never exuded a serous discharge, and which are chiefly annoying by reason of their unsightliness. They involve the left side of the face near the nose—a common site—and the palms of the hands, the groups rarely exceeding the size of a half-dollar. In places they are covered with a thin, brownish-tinted crust. This patient has been infected, presumably by her husband, some two or three years ago.

Remarks.—It is the practice in this clinic to refrain from asking married women whether they have or have not had syphilis. Their answers to such a question, for the most part, would be valueless. We must know more than they, after inspecting their objective symptoms and securing such tags and ends of a physical history as they can furnish. By far the larger number of them all are innocent of sexual wrong-doing and are the victims of the faithlessness of their husbands, or, what is too often the case, of the infection of the latter prior to marriage.

CASE 13.—A woman, aged 35, presents still a different picture.

History.—The patient has been married 18 years, and gives the following history of her pregnancies: First, a living child, now 16 years of age; second, a miscarriage at the fourth month; third, a child, which died three hours after birth; fourth, a miscarriage, the period of pregnancy in which it occurred not stated. She is suffering from severe cephalalgia, with nocturnal aggravation, and exhibits a tibial node, due to gummatous osteoperiostitis productive of intense pain at night and interfering with her sleep.

Remarks.—This last patient illustrates the importance of securing in all suspicious cases a record of the issues of every pregnancy. Such a record not only throws light on the fact of infection, but often also points with definiteness to the approximate date of the accident. In the case of this patient, the first pregnancy resulting in the birth of a healthy child now living suggests that during the first period of her married life both she and her husband were free from this disorder. Then followed a suspicious miscarriage at the fourth month and the sequels of the pregnancies following point to infection occurring between the two first conceptions; that is, twelve years ago. The present condition of the patient can be sufficiently explained by assuming that syphilitic infection occurred at that time. The cephalic pains which she endures are possibly due to an endarteritis obliterans, not sufficient to produce the graver symptoms of nervous syphilis, but capable of engendering the cachexia from which she obviously suffers. They are a menace to her future if they be not relieved, for while the hemiplegias and tabetic phenomena of late syphilis are more common in men than in women it is not to be forgotten that women, though less frequently, do actually endure the same affliction.

General Discussion of This Disease.—Why is it that when the virulence of syphilis is most potent and energetic, that is, in its earlier periods, when its manifestations are commonly most abundant, active, and impressive, the menace to the health, especially in the item of involvement of bone, nervous tissue, and viscera, is less formidable than later in the career of both the disease and its subject? The answer, given by those who yet hold to the old doctrines formulated by Ricord, is practically derived from the schemes of railway travel. The train starts on a time schedule from the point of departure, and only arrives at the more distant stations when a given period of time has elapsed. The objection to such a scheme, though widely accepted in the past, is admitted even by the French writers who were obliged to coin such phrases as "galloping" and "precocious" for those instances of syphilis in which what should be "late" symptoms of the disease develop "early." The truth seems to be that it is when the system is most taxed in the careworn periods of life, when child bearing has pressed its heavy burden on the woman, often otherwise overwrought, when the worry, the care, the burden of poverty, and the stress of life begin to tell on the reserve force of the body, that the toxins of the disease become most dangerous, even though possibly less potent.

Metchnikoff is of the later school of investigators who think that they have discovered the effective germ of syphilis. Schaudinn's *Spirochæta pallida*, recognized in eight cases of syphilis in man and anthropoid apes, never in non-syphilitic subjects, stained both by the Giesma and the Marino method, is believed to be the parasite long sought. Its discovery in experiments conducted in the Pasteur Institute of Paris seems to lend support to the position. We can only at this time repeat with Lerrede: "The great question seems to make progress."

Special Article

IMMUNITY.

CHAPTER XXV.—CHOLERA.

Concluded from page 789.

The rational prophylaxis, which was founded by Koch on a knowledge of the biologic characteristics of the comma bacillus, has proved of great efficiency. The essential points are the following: 1. Immediate bacteriologic examination of the stools in suspicious cases. 2. Absolute isolation of patients, in a hospital whenever possible. 3. Thorough disinfection of the stools, linen, room and all articles with which the patient has been in contact, including water-closets and privies. 4. Continued isolation during convalescence until the stools are free from vibrios. 5. Repeated bacteriologic examination of the stools of those who have been in contact with cholera patients until their freedom from vibrios is assured. 6. Frequent examination of the water supply at different points in order to detect the occurrence of water infection. 7. In case water infection exists, exclusion of the water from all domestic uses, and the institution of means to rid the water of infection. This may be done in the case of infected wells, but in the case of large systems reconstruction may be necessary for future protection. Water for household use should be boiled. Kolle compares the conditions in Germany and Russia during the epidemic of 1892-4. In Germany, where Koch's principles of prophylaxis were rigidly observed, about 10,000 cases occurred, 9,000 of which were confined to Hamburg, whereas in Russia, where precautions were not enforced strictly or generally, 800,000 cases developed during the same period.

Prophylaxis.

Protective inoculation has shown itself to be of distinct value for prophylaxis against cholera. Ferran, a Spaniard, first practiced vaccination on a large scale in 1884, although little definite knowledge of the value of the procedure resulted from his work. He is supposed to have used impure cultures. Haffkine introduced protective inoculation on a large scale in India, and up to 1895 had inoculated 40,000 persons. Following Pasteur's method with anthrax, he used two vaccines. Vaccine 1 was a culture which had been attenuated by prolonged growth at 39 C. Vaccine 2, which was administered five days later, was a virulent culture. The living organisms were used in both vaccines and the injections were given subcutaneously. The local and general symptoms were mild. Instead of living cultures Kolle has proposed the use of virulent cultures which have been killed by exposure to a temperature of 58 C. for one hour. The vaccine is preserved by the addition of 0.5 per cent. phenol. In the Japanese epidemic of 1902 this method was used on an extensive scale. The incidence of disease among the uninoculated was 13 per cent., among the inoculated 0.06 per cent.; the mortality among the uninoculated was 10 per cent., among the inoculated only 0.02 per cent. The disease, when it occurred in the inoculated, was of a mild type. A single injection of from 2 to 4 mg. of a killed agar growth was given subcutaneously (cited by Kolle). Strong has proposed the use of the products of autolysis of the cholera vibrio as a vaccinating substance, a method founded on the observations of Neisser and Shiga in relation to typhoid, and of Conradi and Drigalski in relation to dysentery. The local and general symptoms are said to be of a mild type. The method has had no practical application.

Vaccination.

From what was said above in connection with the so-called cholera carriers, it is evident that not all are equally susceptible to infection with cholera. The conditions on which such cases of individual immunity depend are not known conclusively, although it is often intimated in a general way that a strong bactericidal power of the body fluids, or a high phagocytic power on the part of the leucocytes, is responsible for it. The gastric juice, on account of its acidity, offers a barrier to the passage of living vibrios into the small intestines. It is nevertheless evident that the barrier in many instances is not a serious one. Organisms which are ingested with water may pass rapidly to the intestines without being affected by the acid of the stomach, or when taken with food they may be buried in the latter and hence not come in contact with the gastric secretion. It seems probable that the intestinal epithelium has a certain resistance to invasion which is most manifest in the case of those who do not become infected in spite of the presence of the organisms in their intestines. Natural immunity is said, by Germans, to be one which is directed against the bacteria rather than against the endotoxin. Proliferation of the organisms in the intestinal epithelium is thereby prevented. Poorly nourished individuals, the very young and the very old are particularly susceptible. Other gastrointestinal disorders, in the presence of an epidemic, predispose to infection. Defects in the intestinal epithelium, or a decreased resistance of the latter, may afford conditions which are favorable for invasion.

Natural Immunity.

Active immunity, as that which results from infection or from protective inoculation, is characterized by the appearance

of bactericidal amboceptors, agglutinins and specific precipitins in the serum. It is now widely believed that acquired immunity depends on the presence of the bactericidal amboceptors in the circulation and body fluids, although Metchnikoff holds, on the other hand, that it depends to a large degree on an increase phagocytic power on the part of the leucocytes. According to Pfeiffer and Marx, the antibodies are produced in the blood-forming organs. An attack of cholera confers immunity of prolonged duration, although it is not always absolute.

Acquired Immunity.

Passive immunity is readily induced in animals by the injection of anticholera serum. As in other instances, it is of short duration, however. Doubtless the same condition may be induced in man. Besredka has proposed mixed active and passive immunization by way of protective inoculation, using killed bacteria which have been saturated with the specific amboceptors.

Serum therapy has been no more successful in cholera than in typhoid fever. The antitoxic serum of Roux and others has had no practical trial. According to Achard and Bensaude, the serum of cholera patients, on the third or fourth day of the disease, agglutinates the cholera vibrio. However, they used the serum in dilutions of 1-20, and in this strength even normal human serum may be agglutinating (Pfeiffer and Kolle, cited by Paltauf). Convalescents even after seven months may show an agglutinating power of from 1/100 to 1/120.

Serum Therapy and Agglutination.

The bacteriologic examination of the stools is the most reliable means of early diagnosis (see above).

Clinical Reports

ERYTHEMA MULTIFORME FOLLOWING VACCINATION.

LOUIS M. WARFIELD, M.D.,

ST. LOUIS.

Considering the great number of persons vaccinated, the comparatively few complicating eruptions that occur is not a little surprising. As has been often remarked, many eruptions occurring in the course of a vaccination period are undoubtedly accidental, while others are undoubtedly due to the vaccine virus.

A condition sufficiently interesting to report came under my notice not long ago.

Patient.—Miss J. H., aged 23, a trained nurse, had never been vaccinated previously, and has always enjoyed exceptional health. Her appetite and digestion are good and menstruation regular. She had had the usual mild children's diseases when young, but had never had any eruptions. For about a year she has been very slightly troubled with constipation. Previous to her vaccination she had been in perfect health and had no gastrointestinal disturbance nor any symptoms of even a mild illness.

Vaccination and Result.—She was vaccinated July 29 on the upper left arm. On August 1, before she noticed anything at the site of the vaccinated area more than a slight itching, she saw irregularly shaped bright red spots on the forearm. These spots soon appeared on the lower legs, and shortly both arms from shoulder to wrist, and both legs from thigh to ankle, were thickly covered. These spots soon became firm, nodular and painful. There was no itching or burning. She felt sore all over. There were pains in the knee joints, and wherever the lesions were close to the bones they were very painful to the touch.

Examination.—August 4. She is a well-developed, well-nourished woman. The mucous membranes were a good color, tongue somewhat coated, pulse slightly accelerated, temperature 100 F. Over the extensor surfaces of the arms and legs there was an eruption consisting of rose-red irregularly-sized and shaped spots, level with the surface of the skin, bright red, somewhat infiltrated areas, varying in size from that of dimes to five cent pieces, and firm, deeply seated nodules, perceptibly raised above the surface of the skin. There were no vesicles, nor was there umbilication of the nodules. The nodules situated over bony prominences were quite firm and exquisitely painful to the touch. Some were of a typical violaceous hue and appeared shiny. There was no definite line of demarkation seen between the lesions and the surrounding skin.

Subsequent History.—New crops came out, following the order of ripening described from day to day, until August 8. In the meantime, the older lesions grew softer, less painful and more purplish in color. On August 8 vesicles appeared at the site of the vaccination. These ran a normal course. On August 10, three small vesicles appeared on the right forearm; by the next day these had disappeared, leaving small red spots with slightly umbilicated centers. By August 14 the rash had entirely disappeared and only a few brownish stains were visible. During the period of the eruption there was slight fever but not more than could be attributed to the effects of the vaccine itself. The only inconvenience was the general soreness, especially in the knees and elbows.

Remarks.—That this was a typical case of erythema multiforme is certain. The whole course of the eruption was short, but the lesions and their appearance in crops were typical. Most curious were the great tenderness of the nodules and the feeling of soreness over the arms and legs, especially around the knee and elbow joints. There were no lesions on the backs of the hands or dorsal parts of the feet. As usual with erythema multiforme, the eruption showed itself before the vesiculation of the vaccinated area.

LAPAROTOMY UNDER LOCAL ANESTHESIA ON A PATIENT, AGED SEVENTY-TWO.

R. L. IGEL, M.D.

LEAVENWORTH, KAN.

I wish to report a very interesting case that came under my care July 31, 1905.

Patient.—A woman, aged 72, was suffering from an ovarian cyst of seven years' standing, which had grown to such an extent as to fill the whole abdominal cavity.

Examination.—I found her in terrible pain, resembling that of obstruction of the bowels. An enema was given, with no results, and I knew that cathartics would only increase the trouble. I therefore determined to relieve the bowel that I was sure was being obstructed from the pressure of the cyst by tapping the tumor.

Operation,—She was taken to the hospital, a few blocks from her home and was prepared for operation. Chloroform and ether were contraindicated by her age and exhausted condition, so I began by injecting a small amount of a 4 per cent. solution of cocain three inches below the umbilicus, in the median line, just under the skin, and followed with my knife, making a clean incision. The adipose tissue was then gone through and separated until the peritoneum was reached, and this tissue was cocainized in like manner in front of the knife. This incision brought the cyst into plain view. I then tapped it with a small needle, to allow shrinkage enough to grasp the walls with forceps, after which a trocar was inserted and the liquid, which measured four gallons, was allowed to run off slowly. I made a complete exploration of the abdomen and of the adhesions and withdrew as much as possible of the cyst from the walls of the abdomen, so as not to allow of any infection, washed the sac out with normal salt solution, replaced it and allowed one-half pint of the solution to remain. I also filled the abdomen with normal salt solution and did as thoroughly aseptic an operation as possible. The peritoneum was closed with four stitches and the abdominal wall with two stitches. The patient talked to me in the meantime and turned herself on one side to help me drain the cyst. Her pulse and heart were constantly watched and she was allowed to take continuous sips of cool water.

Result.—She was removed from the table to a ward. She did not complain during the operation, nor since. The bowels moved freely of themselves. That night she took two cups

of tea and slept the whole night, and has been doing well ever since. She experienced no shock whatever.

Remarks.—I did not allow any stimulants, such as strychnin or brandy, to be used. Morphia gr. 1/4, atropin gr. 1/150 was given at the start. I entered the abdominal cavity with the intention of giving my patient every possible chance, as I did not wish to infect the abdomen with a probable infectious tumor and, therefore, to endanger her life. As a general anesthetic was contraindicated it was necessary to use local anesthesia, but, in all, probably not more than 40 minims of a 4 per cent. solution of cocain was used.

The case appeals to me, for the ease in which the abdomen was entered, the absence of bad after-effect and of shock, the entire absence of any discomfort from the operation, and the wonderful manner in which the patient is continuing to recover.

A FATAL CASE OF TETANUS OCCURRING WITHIN SEVENTY-TWO HOURS OF INJURY.

J. B. TYRRELL, M.D., Sc.M.
WATERVILLE, MINN.

Patient.—W. D. G., boy, aged 10.

History.—On Tuesday, Aug. 15, 1905, at about 6 p. m., the boy fell from a stageing to the ground, a distance of about 8 or 10 feet, and sustained a compound fracture transversely through the lower epiphysis of the tibia, the bone ripping the soft parts and stocking for a distance of 4 inches above the site of the fracture and sticking to the ground.

Treatment.—He was picked up and carried to his home, where the wound was cleansed thoroughly, care being taken to leave no foreign particles in it; hydrogen peroxid was used finally. The bone was replaced and the leg put in a temporary splint dressing. The subsequent treatment consisted of irrigation of the open wound and the liberal use of hydrogen peroxid.

Subsequent History.—On Saturday, August 19, his father, who is a physician, told me the boy had had during the previous night what appeared to him as premonitory twitchings, and on that day, Saturday, there was slight rigidity of the muscles of the neck and inability to open the mouth wide. Antitetanic serum was ordered for him. Intraneural and intraspinal injections were advised, but were refused. The serum was given subcutaneously, and the paroxysms were controlled by hypodermics of morphin every few hours. His symptoms progressed rapidly, and death occurred at 2 p. m. Aug. 23, 1905.

Remarks.—There is a question in my mind as to the time of inoculation in this case. Was he infected at the time of this injury or at an earlier period? About a week or ten days previous to this injury, according to the boy's mother, he stepped on a rusty nail, running it into his foot. The boy did not let his father know of this, and had his mother dress the wound, which healed promptly. He received this wound in practically the same locality in which the leg was fractured—not over 50 feet away. Was he infected with the tetanus bacillus at this time? I think it is possible, but I believe it is not probable in this case.

New Instrument

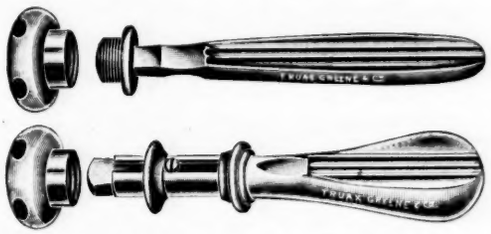
MURPHY BUTTON OBTURATOR AND APPLICATOR.

A. H. CORDIER, M.D.,
KANSAS CITY, MO.

Having used the Murphy button for many years and having met some difficulties in its application or introduction I have devised an instrument that in a great measure overcomes all the obstacles thus far met. The method usually employed heretofore to introduce the button has been to seize the rim of either half of the button with a pair of hemostats, thus forming a handle to facilitate the introduction.

On several occasions, not only in my own work but in the work of other surgeons, the grasp of the forceps has injured the thread of the button or has dented the circumference of one-half the button so that when the two halves have been applied and were ready to be shoved together they would not fit thus necessitating the removal of the second half of the button and the introduction of a new button in the place of the one injured by the forceps. One blade of the forceps must of necessity clasp the outer side of the stem of the button so that the purse string suture is tied over the end of the forceps, thus interfering with the proper adjustment of this suture, so that when the forceps were removed the button would drop into the intestine.

Again, while the button is being introduced the gases and other contents of the intestine are escaping thus increasing the dangers of an infection in the field of the operation. Frequently in tying the purse string around the stem of the button the mucous membrane would be crowded beyond the end of the stem so that when the approximation of the two halves was attempted this mucous membrane was found to be in the way. The forceps do not give a sufficiently firm handle to force the button into the viscera, and to overcome the objections met with in the application of the button, I have devised an instrument to be called the Murphy button obturator and applicator. This instrument is very simple in its use and facilitates very materially the introduction of the button. It requires three sets for the three sizes of the Murphy button. The obturator that is used in the female half of the button is simply a handle with the flange projecting where it comes in contact with the end of the stem, the portion projecting into the button is threaded to screw into the stem of the button, thus the opening in the button is effectually closed during its introduction; there is a good firm handle to hold to and the projection rim prevents the puckering string from crowding mucous membrane beyond the stem of the button.



The obturator that is used in the other half of the button is composed of a hollow canula with a movable center piece. This piece at the end that is introduced in the button is wedged shape so that when the projecting portion of the canula is introduced into the half of the button and the movable piece is pulled on it spreads the slit end of the canula thus holding the button firmly. After the two halves have been introduced and are ready to be pushed together all that is necessary is to unscrew the obturator in the female part of the button and to press on the handle of the movable piece in the canula, instantly releasing the hold on the male half of the button.

The application of this instrument is far more simple than this description would seemingly imply. A reference to the accompanying illustration will give the reader a better idea of the obturator and applicator than the description.

Overlying an Infant Punished as Manslaughter in England.—Thousands of cases of death from overlying take place in Great Britain during a year. In certain cases coroners have often wished to obtain a verdict of manslaughter against the mother, but public opinion is opposed to such a course. Even in cases in which the coroner's jury has brought in this verdict it is usually set aside by the grand jury finding "no true bill." A case has at last occurred, however, in which the mother has been punished. At the Chester assizes Judge Phillmore sentenced a woman aged 31 years to twenty-one months' imprisonment with hard labor. Eleven days after confinement she took her child to bed with her while in a drunken state. She slept heavily and overlay and suffocated the infant. The jury found her guilty of manslaughter by an act of gross and culpable neglect.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

SATURDAY, SEPTEMBER 16, 1905.

THE TECHNIC OF PERCUSSION.

One of the first things taught to students of medicine in the clinical course is the art of percussion. Along with inspection, palpation and auscultation, percussion is a fundamental method of examination. Unfortunately, it is too often improperly taught, and even when the teaching is good it is surprising to find how few students perfect themselves in its application. Since the advent of laboratory methods, too, it is to be feared that less attention is paid to physical methods than is their due. Microscopic examinations of sputum and blood are extremely helpful, but the physician who relies on such methods alone and who does not practice assiduously the time-honored physical methods will make but a sorry mess of his work.

It matters but little which method of indirect percussion one uses—finger on finger, finger on plessimeter, or hammer on plessimeter; the important matter is to learn thoroughly one of the methods or all of them, so as to obtain trustworthy results. The percussion by finger on finger, however, has many advantages. In the first place, one has his armamentarium always with him, while hammer and plessimeter are constantly being left behind, lost, or broken. In the second place, the sound yielded by the finger itself is less disturbing than that of the plessimeter. In the third place, the sensations of touch and resistance felt by the finger percussed are often as important as the percussion sound, and they are missed when hammer and plessimeter are used. Finally, one can control the pressure of the finger against the surface to be percussed more easily than that of the plessimeter, and this is of as great importance in eliciting distinctions of percussion-sound as is the force of the blow of the percussing finger itself. It is easier at first, it is true, to secure fairly satisfactory results with hammer and plessimeter. Percussion by finger on finger is undoubtedly harder to learn, but once skill is acquired the method for most purposes is superior to all others.

Like every art, percussion can be perfectly learned only by long experience. There are, however, a number of small details of technic which, if observed, help greatly in the acquisition of the art. The error made by all students at the beginning (and it is to be feared by many teachers in the so-called percussion courses) is an attempt to produce loud sounds, sounds that convince the neighborhood. Nothing could be more disastrous to success. Even when it is desired to elicit the so-called "deep dullness" in contradistinction to "superficial dullness," a very slight blow is required, only a little stronger than the delicate stroke needed to demonstrate the latter. The clinician who percusses so that an audience in an amphitheater hears the sound undoubtedly makes a noise, but nothing accurate in the way of percussion limits can be so demonstrated. When the superficial dullness of the heart, for example, is to be outlined on the thoracic wall, the lightest possible percussion should be used. The moment one percusses strongly the vibration is propagated beyond the local limits and a mixed sound is produced. Indeed, the skilled diagnostician in localizing superficial limits on the thorax percusses so lightly that over an area of superficial dullness practically no sound is heard; then the moment he moves from the solid organ to an air-containing one the same percussion stroke produces a distinct resonance. In no other way, to cite another example, can the so-called "lung-liver limit" be accurately localized. With the light percussion described—so-called "superficial percussion"—the areas of solid organs on the thoracic wall can be demonstrated with ease, and small pleuritic effusions, pneumonic patches, or pulmonary infarcts which on ordinary rough-and-ready percussion would be entirely overlooked are readily localized. The accurate determination of the deeper dullness, for example, the deep cardiac dullness (so-called relative dullness) is far more difficult than the determination of superficial dullnesses; but here too the rule is to use the lightest percussion stroke that will elicit the distinctions which exist. In determining superficial dullness, the plessimeter finger should be applied as lightly and evenly as possible, without pressure to the surface to be percussed; in eliciting deeper dullness the plessimeter finger may be more firmly applied.

In this indirect percussion only one finger of each body surface, a point of great importance in the production hand for making the blow, the index, or preferably, the middle finger of the left hand for receiving it (plessimeter finger). The plessimeter finger, with volar surface applied to the part to be percussed, must be everywhere in close contact with the surface and should be placed parallel to the boundary line which one desires to determine. The percussing finger (its nail closely pared) is flexed and the blow so given that the axis of the terminal phalanx, when the pulp of the finger strikes the plessimeter finger, is perpendicular to the body surface, a point of great importance in the production of the right sounds. The hand and fingers should be held loosely, anything like an awkward, tense or cramped attitude being avoided. The blow is made solely by flexion of the wrist, the forearm remaining stationary; it should be light, as has been said, short and elastic.

If medical students could be carefully supervised until they have acquired the technic of percussion and have learned to have real confidence in the results obtainable by it, instead of being compelled, as they often

are, to carry into their practice that distrust which is engendered by false methods and insufficient training, the art would be far more highly valued and more widely practiced than it is even to-day. Fortunately, exact training in the method of percussion is now being insisted on in our best medical schools; moreover, those of us who failed to get it may easily acquire a good method if we patiently set about it with the aid of one of the many good text-books now available.

REGIONAL DISEASES AND THE SESSIONS OF THE AMERICAN MEDICAL ASSOCIATION.

When medical associations were first formed in this country one of their principal avowed objects was the gathering of data in order to enable physicians to understand the various diseases which occurred in different parts of the country. At that time, over a century ago now, meteorologic conditions were considered to influence disease types, much more than is now known to be the case. In spite of this, however, there is a very interesting variation in disease in different parts of the country, and the annual sessions of the American Medical Association—held each year in a different section—serve to call special attention to this. When the Association met at New Orleans two years ago, special attention was given to the intestinal parasitic diseases of the southern states, and great light was thrown on the practical side of the diagnosis and treatment of these affections.

The recent session in Portland, Oregon, has enabled us to add to our knowledge of types of disease which exist on our western coast. It was interesting to find that practitioners along the Pacific coast are universally agreed that the various forms of vascular degeneration are more common in the far western states than in other parts of the country or in Europe. From San Francisco, particularly, it was reported that precocious arteriosclerosis is a rather common affection. This is true not only as regards the ordinary thickening of arteries, but also of the occurrence of the advanced stages of arterial degeneration as represented by aneurismal dilatation of various arteries. Aortic aneurisms are particularly common, considering their rarity ordinarily, and are found to affect not only the arch of the aorta, but also the abdominal aorta. There is no doubt about the diagnosis of these cases, for quite apart from the fact that the diagnosis was made by careful, conservative clinical observers it was confirmed in most cases by means of the *x*-rays, and under ordinary circumstances this leaves very little room for doubt in these conditions. A report of undue frequency of premature arterial degeneration on the Pacific coast would have caused little surprise had it been made thirty years ago. At that time the pioneers of the early days in San Francisco, the forty-niners and men of the early fifties, were still alive. These men presented in their life histories most of the etiologic conditions which are usually considered to bring about arterial degeneration. Most of them had been very hard workers and had gone through serious privations in the pioneer days. Nearly all, under the trying circumstances of their lives, had used alcohol to excess, and not infrequently with an irregularity of food consumption and a lack of nutritious material likely to make alcohol even more serious in its effects than usual. Not a few of them indulged in other vices and suffered the usual effects which were much more liable to occur under the low moral conditions of the early days.

In addition to the above diseases, many affections of the thyroid gland are reported[1] as existing quite commonly, not only along the southern Pacific coast in California, but also in the Pacific northwest. It is reported that a certain number of animals with enlarged thyroids have been observed in Oregon and in the southern part of Washington. Ordinary exophthalmic goiter occurs apparently with more frequency in and around San Francisco than in the large cities in other parts of the country. It would seem not unlikely that if these two conditions of arterial degeneration and thyroidism really exist they may possibly be connected with one another. The over-action of the heart so common in exophthalmic goiter may very well be the cause of the arterial degeneration seen in other cases. It is possible that while other symptoms are only slightly manifest the effect on the heart may be very marked and this in turn may cause the over function of the arteries which ultimately leads to sclerotic conditions. It is to be hoped that the attention which has been directed to the diseases of the Pacific coast may result in new light being thrown on the etiology of these important conditions.

THE EFFECT OF TOBACCO IN HEALTH AND DISEASE.

Next to alcohol, there is probably no substance used by man which has been so villified and condemned as tobacco. Certain intemperate temperance advocates from time to time have attempted to pass laws prohibiting the use of certain forms of the weed in various states, and in some instances anticigarette ordinances have been placed on the statute books. Probably the smokers in such states believe themselves much persecuted, when, as a matter of fact, there were at one time European countries in which smoking was illegal, and in Turkey the offence was, for a short period, punishable by death.

The attitude of certain in authority regarding the practice of smoking during the early days of the habit is shown by the words of James I. of England, expressed in his celebrated "Counterblaste to Tobacco." He describes smoking as "a custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and in the stinking black fumes thereof nearest resembling the horrible Stygian smoke of the pit that is bottomless." It can not be denied that in modern times large numbers of medical men have been addicted

1. Herbert C. Moffitt: "Affections of the Thyroid in California," The Journal A. M. A., this issue, p. 837.

to the use of tobacco, perhaps a larger percentage than of men in general. The consumption of this substance in its various forms reaches an enormous figure each year, and one is tempted to ask, If it is so harmful, why do not physicians see more of its ill effects? As a matter of fact, there is singularly little literature of a convincing nature bearing on its evil effects, if we except one or two conditions like the tobacco heart and tobacco amblyopia.

A perusal of a series of papers concerning the effect of tobacco in health and disease, contributed by a number of eminent English authorities,[1] leaves one with the feeling that there is still much to learn regarding this substance. The evidence brought forward as to its action on the various organs seems to bring out sharply a few facts, the most important of which is that tobacco is undoubtedly injurious during childhood and youth. The evidence that it is to any great degree injurious to the mature adult is much less strong. There is, on the other hand, much evidence to indicate the stimulating and sedative effect of smoking in moderation. Lauder Brunton, who deals with the action of tobacco on the circulation, cites cardiac irregularity as the common symptom of excess, and pseudoangina as the rare one. The contributor on the effects on the gastrointestinal tract, Dr. Norman Dalton, is able to find but one or two cases in the literature in which a convincing relation between tobacco and stomach trouble exists. It is admitted that we know but little about the effect of tobacco on the intestines, though there is clinical experience, opposed to experimental data, that it favors peristalsis. The effects of tobacco in excess on the nervous system are tremor, giddiness, vasomotor disturbances, such as cold hands and feet, and intranocturnal insomnia.

The effects on the mouth and tongue may be said to be, in the main, minor, though the predisposition to epithelioma of this region must not be overlooked. The effect on the upper air passages is to produce in some cases a pharyngitis and to exaggerate already existing pathologic conditions, such as sinus disease. The general impression gathered from these papers is that in the adult tobacco must be used to excess to produce serious consequences; that even under such conditions severe lesions are rare; that cigarettes are the worst form in which to use the substance, and that the poisonous effects of tobacco are greatly increased by the simultaneous use of alcohol. The question simmers down, then, to the old one of moderation, except in the case of individuals with an idiosyncrasy to the weed. Just what is moderation must, of course, be decided in each individual case by actual experiment. One man can consume with impunity a number of cigars or cigarettes which would seriously poison another. The whole subject is one which needs further investigation, and which will be most difficult to elucidate, at any rate clinically, on account of the frequency of complicating conditions, such as the simultaneous use of alcohol. In view of the scantiness of the literature on certain phases of the subject, it is to be hoped that the profession will be on the lookout for cases of this character and will record them.

1. The Practitioner, vol. lxxv, No. 1.

THE OXIDIZING FERMENTS OR OXYDASES.

In a recent issue we called attention to the catalytic nature of the intracellular ferments and referred more particularly to the work which has been done on the enzymes which accelerate proteolysis and autolysis. Just as interesting are the researches of ferment chemists concerning the influence of enzymes on the processes of oxidation which go on in living organisms. Since Lavoisier's time it has been known that the animal body possesses oxidizing properties; later studies went far toward localizing the oxidation processes in the cells (Hoppe-Seyler, Pflüger, Schmiedeberg); still later it was proved that the cells need not be intact to cause the oxidation, crushed cells and cell extracts being shown to be effective; finally, it has been demonstrated that the oxidizing processes in the cells are dependent on the presence in them of specific catalytic agents—the oxidizing enzymes or oxydases (Bertrand, Schoenbein, Jacquet, Schmiedeberg, Jacoby). A whole series of oxydases is now recognized, but we shall refer only to six better known examples.

First of all there is the ferment which oxidizes hydrogen peroxid to water and free oxygen gas. It is a matter of every-day experience that oxygen gas is liberated when hydrogen peroxid solutions are brought into contact with blood, pus or tissue cells. The proof has been definitely brought that this oxidation is due to a special enzyme, which is destroyed at a temperature of 100° C., and whose action is inhibited by poisons like hydrocyanic acid. This ferment is widely distributed in the body, the scale of activity, according to Spitzer,[1] decreasing in the series—blood, spleen, liver, pancreas, thymus, brain, muscles, ovary, Fallopian tube. A second oxidizing ferment is that in animal and plant cells which turns the guaiaconic acid of gum guaiacum blue. It also is inhibited in its action by hydrocyanic acid (Schoenbein).

Closely allied to the above is the third very important oxidizing ferment, the so-called laccase of Bertrand.[2] It was shown by Yoshida that this enzyme is responsible for the formation of that valuable commercial product, black Japanese lacquer. Bertrand has made a thorough chemical examination of laccase. He obtained it in preparations free from albumin and demonstrated in it the presence of manganese, along with non-nitrogenous organic substances. This finding is of great importance, for it suggests the possibility that the nature of ferments is to be sought in combinations—probably colloidal—of organic substances with metal ions.

Remarkable in its oxidizing effects is a fourth enzyme, the so-called tyrosinase, discovered by Bertrand.

1. Pflüger's Arch., vol. lxxvii, 1897.
2. Compt. rend. de l'acad., 1895-1897.

He found it in plants and showed that under its influence the white amino-acid tyrosin is converted into colored compounds. One sample of tyrosinase obtained by Gonnermann[3] is capable of changing tyrosin into homogentisinic acid, a fact which turns the clinician's mind at once toward a possible explanation of the pathogenesis of alkaptonuria in human beings, especially as tyrosinase has already been demonstrated in the tissues of certain animals by Biedermann and by v. Fürth and Schneider. It appears probable that the melanin of the cuttlefish is formed through the oxidizing influence of a tyrosinase.

A fifth oxidizing ferment present in the pancreas, salivary glands, spleen, bone marrow and thymus, but not in the lymph glands, breasts, muscles, lungs, brain, adrenals, testicles or kidneys, is that shown by Roehman and Spitzer[4] to influence the synthetic origin of indophenol in the body. They call it indophenol-oxydase.

Perhaps the most important, at any rate the best studied, of the oxydases thus far discovered in living tissues is the aldehydase of Jaquet,[5] isolated first in Schmiedeberg's laboratory. It is very widely distributed in the animal body, occurring in the liver, spleen, salivary glands and thyroid, though it has not yet been demonstrated in the pancreas, muscles, breast or bone marrow, from which organs it appears to be absent. An interesting fact brought out by Jacoby is that, while abundant in the cortex of the suprarenal body, it is absent from the medulla of that organ, just the opposite of adrenalin, which occurs in the medulla but not in the cortex. This aldehydase has the power of oxidizing aldehydes of both the aromatic and fatty series to their corresponding acids. Thus salicylic aldehyd is oxidized by it to salicylic acid and formaldehyd to formic acid. It has been found possible to isolate this ferment comparatively easily, the method of precipitation by uranyl acetate worked out by Jacoby[6] being especially successful for the purpose. It is a true "contact substance" in the chemical sense, as the ferment is not used up during the single reactions, but only very gradually becomes inactive. The laws to which its activities are subordinate have been carefully studied by Medwedew.[7] In certain pathologic conditions the relations of aldehydase have been examined; thus it is not absent from the liver in phosphorus poisoning nor in diabetes mellitus (Jacoby), though it appears to be lessened in amount in the livers of children dead of gastroenteritis (Pfaundler[8]).

The multiplicity of oxydases is an interesting feature. There is no general oxydase, but specific oxydases are active for the individual oxidizing reactions. On the one hand, a given organ may contain one oxydase and not another, and on the other different oxydases may be isolated from one and the same organ. The comparative table of Rosell,[9] showing the distribution of various oxidizing ferments, is of interest in this connection.

As we pointed out in a previous article, the exact chemical nature of the ferments is as yet unknown. The chemistry of the constitution of oxydases is almost as obscure as is that of other enzymes. It seems clear, however, that they are not albumin bodies or nucleoproteids, and there is a good deal of evidence that they represent organically bound metals, most probably iron and manganese.

3. Pflüger's Arch., vol. lxxxii, 1900.
4. Chem. Berichte, 1895.
5. Arch. f. exper. Pathol. u. Pharmak., vol. xxix, 1892.
6. Ztschr. f. physiol. Chem., 1900.
7. Pflüger's Arch., vol. lxxxi, 1900.
8. Jahrb. f. Kinderheilk, 1901.

THE YELLOW FEVER.

The situation has not changed materially during the week. In New Orleans the improvement has been so well maintained that there is a menacing relaxation of public efforts at mosquito destruction. At two points in Louisiana—Tallulah and Patterson—the conditions are grave, a large proportion of the population ill, no funds to work with, and the populace hostile to the mosquito doctrine. The state has offered a small sum if the citizens do their part, and Dr. Charles L. Chassaignac, New Orleans, has left his practice and volunteered to take charge at Tallulah in the hope of arousing the community to help itself, and with a view to proper care of the sick. Reference to our news columns will show that the conversion of Governor Vardaman of Mississippi to rational methods is complete, thorough and creditable. No doubt this excellent result is due to the personality and enlightened persistence of Dr. John F. Hunter, Jackson, secretary of the State Board of Health, and of the officers of the U. S. P. H. and M.-H. Service, with whom Mr. Vardaman has been recently thrown in contact. Mississippi has a number of infected points, the governor and communities admit the failure of shotgun quarantine, and scientific methods under the supervision of the U. S. P. H. and M.-H Service are being vigorously applied. The muddle in Arkansas is astonishing, but it is too early to arrive at final conclusions as to the merits of the controversy. Members of the old State Board of Health appear to have resigned as a matter of principle and as a protest against irrational and overriding methods of Governor Jefferson Davis, and if this prove to be the case, physicians will regret that the governor was able to find other medical men to take the places vacated under such circumstances. Judgment must, however, be suspended until further facts come to light. It looks as if Florida might have a considerable epidemic from the Pensacola focus. Everywhere in the infected area the facts are fully confirming the mosquito conveyance. For instance, Tallulah, La., early in the epidemic had a few cases which ran their course without others appearing and for two weeks or more no further cases occurred, so that it was hoped the infection had run out. However, from lack of funds and from popular disbelief in the part played by the stegomyia, no serious effort was made to destroy the mosquitoes and now the community is more generally infected and is in more grave condition than any other yet involved, the infection not coming from outside but from the infected mosquitoes allowed to thrive after the first cases occurred.

9. Dissertation, Strassburg, 1901.

"PICTURES THAT TELL THEIR OWN STORIES."

Under the above caption, the *Ladies' Home Journal* for September devotes a page to pictures that tell their own stories most effectively. One of the pictures is a reproduction of a testimonial from a congressman, in which he tells how satisfactory he found peruna for grippe and catarrh; parallel with this picture is a reproduction of a letter from the same congressman, in which he states that the letter referred to is a forgery and that neither he nor his family ever used the nostrum. Another is a photograph of an advertisement showing how the names obtained by patent medicine concerns—often under the promise to keep them confidential—are sold or rented. A photograph of a label taken from a bottle of Mrs. Winslow's soothing syrup, bought in England, shows that there they have to acknowledge that it contains morphin; for on the label is the legend: "This preparation, containing, among other valuable ingredients, a small amount of morphin, is in accordance with the pharmacy act hereby labeled POISON." The most "telling" picture in the group is one that contains a reproduction of an advertisement which tells us about Mrs. Pinkham: "Having had considerable experience in treating female ills . . . it was easy for her ailing sisters to pour into her ears every detail of their suffering. . . . Any woman, therefore, is responsible for her own suffering who will not take the trouble to write to Mrs. Pinkham for advice." Parallel with this is a photograph of the tombstone in Pine Grove Cemetery, Lynn, Mass., which bears this inscription: "Lydia E. Pinkham, born Feb. 9, 1819, died May 17, 1883."

THE CHOLERA.

From the press dispatches we learn that Asiatic cholera has again invaded Western Europe from Russia, where it has probably been more or less epidemic for some time, notwithstanding the alleged statement of an official commission that no case has occurred in the Russian empire since April 21. The cases thus far reported are confined to certain districts of Prussia, one or two exceptional cases occurring in Hamburg. While it is not anticipated that there will be any repetition of the epidemic of thirteen years ago, the sanitary authorities are wide awake to a certain degree of peril in the situation, and even in this country steps have been taken by the Public Health and Marine-Hospital Service to prevent any possible importations of the disease. The sanitary conditions in Russia are never entirely satisfactory, and it was pointed out some time since that, owing to the internal disturbances and to the fact that the war is draining the country of physicians, the dangers of a cholera epidemic are imminent. With an ignorant populace, a certain degree of weakening of authority and a general lack of intelligent medical supervision in many extensive districts, the fact of cholera leaking over the borders is not at all an encouraging one. It will be very surprising indeed if Russia does not suffer severely from this cause, and it will require active measures on the part of her neighbors to prevent an extension of her misfortunes beyond her boundaries. The extensive immigration of Russians into this country, which does not seem likely to be soon checked, will call for vigilance on the part of health officers at seaports where the immigrants land, and it is reported that several Russian immigrants have been rejected because they came from cholera-infested districts. It is fortunate, however, that, with our better knowledge, cholera is not likely to become the formidable scourge of previous years, but it would not require a very extensive neglect of necessary precautions to make it even now a serious matter.

FEE BILLS LEGAL.

Down in Texas, not long since, some trustophobiac thought he saw in a fee bill of a local medical society a violation of the antitrust laws of the state, and promptly submitted the matter to the attorney general. That official took the matter seriously enough to give a written opinion, which probably settled the matter, in the mind of his inquirer, as far as Texas is concerned. According to the opinion of the attorney general, it is not a restriction of the free pursuit of business for any person or set of persons to refuse to sell their professional services for less than the value they themselves place on them. This would seem to be sufficiently self-evident, but perhaps it is just as well to have a legal opinion on the matter. Since we hear so much of "medical trusts" whenever physicians unite for scientific purposes to protect themselves from imposition or to secure their rights, a little surplusage of legal utterance of common sense will do no harm.

THE PROGRESS OF PURE FOOD LAWS.

The pure food issue stirs both commerce and politics. The developments of the next six months promise extreme interest. There has recently been organized the "National Fruit Manufacturers' Association," with from 50 to 75 members. Its announced object is to protect the public from adulterated foods and drugs. Among other remarks, the secretary of the new association said: "There will be a pure food law enacted at the next congress; of that there is no doubt. What we must decide is, shall it be a pure food law of the manufacturers or of the food commissioners?" At Portland, the National Association of State Food and Dairy Departments decided that the United States Department of Agriculture has set up impracticable standards and that each state should have its own standards and methods, just what the adulterators hope for. It is a question in the minds of many as to whether around state insurance commissionerships or food commissionerships center the most scandals and greatest graft. Of course honest men do get into these positions, but not always. Only two years ago, one food commissioner withdrew from the association on the ground that it was being used for the personal profit—graft—of its members. Reverting now to the remark of the secretary of the Food Manufacturers' Association, it is clear that the medical profession and the public want neither "a pure food law of the manufacturers" nor "of the food commissioners." Congress is going to pass a pure food law, and we shall be compelled to put in sleepless nights to be sure that the measure is not passed in emasculated and deformed shape.

Medical News

ARKANSAS.

Physician's Name Dropped.—The name of Dr. Oscar S. Burrow, Hot Springs, has been dropped from the registered list by order of the Secretary of the Interior.

Appeal to Annul Rule.—The attorney for the unregistered physicians of Hot Springs has made a direct appeal to the President asking him to direct Secretary Hitchcock to recall all rules relating to the creation of a Federal Medical Board, and to prescribe the qualifications a physician must pass to be at liberty to use hot baths in the care of his patients. The petition was referred by the President to the attorney general.

State Board of Health Changes.—Drs. George M. D. Cantrell, president of the State Board of Health, Robert H. Christian, secretary, William H. Miller and William B. Hughes, all of Little Rock, have resigned from the State Board of Health on account of friction between the board and the governor of the state regarding the quarantine situation. Dr. Joseph P. Runyan has been appointed president, Dr. Joseph P. Shephard, secretary, both of Little Rock, and Drs. Robert A. Hilton, Eldorado, and Eugene H. Abington, Beebe, have been appointed to succeed the retiring members.

Personal.—Dr. Thomas B. Bobbitt has been made chairman of the Beebe Board of Health.——Dr. Henry Owen, Newport, has been elected president of the Jackson County Board of Health.——Dr. James M. Gist, Beebe, has been seriously ill with heart disease.——Dr. William H. Barry, president of the Federal Medical Board, Hot Springs, is critically ill with intermittent fever at his home.——The Ashley County Board of Health has been organized with Dr. William E. Easter, president, and Dr. William S. Norman, secretary, both of Hamburg.——Drs. J. Pell Baker, Morrell, Henry E. Cockerham, Portland, and J. L. Parker, Snyder, were appointed vice-presidents for their respective districts.——Crawford County Board of Health has been organized with Dr. William L. Parchman, Van Buren, president, and Dr. Sharp, Alma, secretary.——Drs. S. G. Robertson, Monticello, John T. Blanks, Baxter, and Sidney Harris, Wilmar, have been appointed members of Drew County Board of Health.

CALIFORNIA.

Memorial to Dr. Brown.—As a fitting testimonial of her worth, the friends of the late Dr. Charlotte Blake Brown have raised a fund of $3,000 to endow a bed in the Children's Hospital of San Francisco.

Loses License.—On the allegation of unprofessional conduct, the license of Dr. Jessie Aldrich, Los Angeles, was revoked, August 22, by the State Board of Medical Examiners. The specific charge against Dr. Aldrich was that she had advertised a "sure cure" for cancer.

Chiropractic Found Guilty.—Thomas H. Story, a chiropractic of Los Angeles, was fined $500, August 27, with the alternative of 180 days' imprisonment in the city jail, for practicing medicine without a license from the State Board of Medical Examiners. He threatens to appeal, and says that the physicians of a dozen schools of drugless remedies will aid him in his fight.

Personal.—Dr. Frederick J. Crease, Bakersfield, has resigned as president of the Kern County Medical Association, and Dr. Henry W. Owen, Bakersfield has been elected in his stead.——Dr. John W. Trueworthy, Los Angeles, is reported to be in a critical condition from concussion of the brain as a result of the wreck of a Pasadena electric car, August 16.——Dr. Albert W. Kirk has been appointed volunteer oculist; and Drs. Emma C. La Fontaine and L. H. Young, all of San Francisco, have been appointed volunteer school inspecting physicians.——Dr. Raymond Russ, San Francisco, has been appointed instructor in surgery in the medical department in the University of California.——Dr. Dumont Dwire, Oxnard, health officer of Ventura County, left for Europe August 23.——Dr. Caroline S. Merwin, Oakland, has gone to China to take charge of a Presbyterian Missionary Hospital at Chinaufu.

COLORADO.

Appeals from Decision.—Dr. William M. Bonnet, Denver, has asked for a new trial in the damage suit decided against him in favor of Mrs. Emma C. Foote, for malpractice in May last.

Hospital Reopened.—The Miners' Union Hospital at Telluride, which has been closed since the miners' strike in September, 1903, was reopened September 1, and will be in charge of Dr. John G. Sheldon.

Personal.—Dr. Lewis E. Lemen, Denver, has been appointed chief surgeon of the Moffat Railroad, and Dr. Hugh L. Taylor assistant chief surgeon.——Dr. Maurice Kahn, Leadville, has been appointed captain and assistant surgeon in the National Guard of Colorado.—Police Surgeon Dr. Francis E. Prewitt, Denver, has resigned.

DISTRICT OF COLUMBIA.

Personal.—On the recommendation of the superintendent of the Washington Asylum, Dr. J. H. Constas was appointed resident physician at the Asylum Hospital, vice Dr. T. J. Sullivan, removed.——Dr. Henry C. Macatee has been appointed medical instructor of public schools, and Dr. Edmund Barry a member of the board of police and fire surgeons.

Typhoid Fever.—On August 26, 16 new cases of typhoid fever were reported at the Washington health office; the number reported since July 1 is now 408, and 286 patients were under treatment on August 25. The district officers do not look for a change in conditions until the middle of September, when the filtration plant is expected to be in full operation.

FLORIDA.

Personal.—Dr. Thomas A. Williams, Jacksonville, is spending the summer abroad.——Dr. John W. Clerke, Green Cove Springs, who has been seriously ill, has returned from Jacksonville and is now convalescent.

Health Board Official Dies.—Mr. R. L. Durrance, executive clerk for the State Board of Health for a number of years, died at his home in Jacksonville August 7 from appendicitis, aged 28. He was an efficient and faithful official and his death will prove a serious loss to the board.

Medical Examiners Approved.—Drs. J. D. Fernandez, Jacksonville; J. Harris Pierpont, Pensacola; Henry E. Palmer, Tallahasse; J. Harrison Hodges, Gainesville; John B. Maloney, Key West; Alonzo L. Blalock, Madison, and R. L. Harris, Orlando, have been appointed members of the State Board of Medical Examiners.

State Health Board Formed.—Captain Harry Fozzard, Jacksonville, has been appointed, and Dr. Horace L. Simpson, Pensacola, and Hon. E. M. Hendry, Tampa, have been reappointed members of the State Board of Health. Dr. Joseph Y. Porter, Key West, holds over as state health officer, as he was elected for that office for four years in February last.

GEORGIA.

Will Probated.—The will of the late Dr. Robert H. Hightower, Dublin, was probated August 10. The estate is appraised at about $60,000.

Appropriation for Sanitarium.—The trustees of the State Sanitarium, Milledgeville, ask for an appropriation for 1906 of $394,000, and for 1907 of $407,000.

Sanatorium Opens.—The Piedmont Sanatorium opened at Atlanta under the charge of Dr. Ludwig Amster, with Dr. Maloney, formerly of the Grady Hospital, as assistant. Dr. Floyd W. McRae will have charge of the surgical department.

Personal.—A fire in the office of Dr. J. Clarence Johnson destroyed his books, papers and instruments July 28.——Dr. Charles F. Benson, president of the Atlanta Board of Health, is seriously ill with typhoid fever.

Hospital Notes.—The Wesleyan Memorial Hospital, Atlanta, was formally dedicated with appropriate services August 19. Bishop Warren Candler delivered a dedicatory address, and Dr. J. Scott Todd spoke on behalf of the medical board of the institution.——Thomasville has just built a new city hospital, representing an investment of about $12,000.——The Macon City Hospital will receive from this time on $5,000 annually from Bibb County and a like amount from the city.

Beneficiary Scholarships.—The following appointments to the beneficiary scholarships at the Medical College of the University of Georgia have been made by the governor: C. M. White, Columbus; J. D. Delmar, Whitesville; G. T. Bernard, Athens; Frank C. Harpe, Buena Vista; W. H. Sutton, Swainsboro; L. L. Lanier, Stillmore; S. T. Register, Lennox; G. T. Crozier, Cedar Springs; Edmund W. Carter, Carsonville; Guy G. Lunsford, Americus; P. J. Brown, Newman; W. B. Spain, Talbotton; E. S. Harris, Bethlehem; M. F. Hurst, Monroe; W. B. Goddard, Milner; George L. Johnson, Yatesville; W. A. Arnhold, Carrollton; Sam C. Cheney, Silver

Creek; O. S. Wood, Madison; Charles T. Ridley, Hillsboro; T. L. McCurry, Centerville; J. S. Burrell, Clayton; Fred A. Lowe, Augusta; C. E. Stapleton, Gibson; J. D. Peacock, Quitman, and Henry Smith, Sirmans.

ILLINOIS.

Physicians Injured.—Dr. Ralph E. Niederinghaus, Granite City, was painfully, though not seriously, injured in a runaway accident August 31.——Dr. Henry C. Fairbrother, one of the oldest practitioners of East St. Louis, was injured internally by falling into an excavation August 31.——Dr. George M. Straight, Winchester, was painfully bruised in a runaway accident August 31.

Chicago.

Personal.—Dr. N. Senn returned from Greenland September 11.——Dr. Truman W. Brophy has returned after a summer abroad.

Fined for Illegal Practice.—H. Wolff, prosecuted by the State Board of Health on a charge of practicing medicine at 503 Sangamon street without a license, was fined $200 and costs September 5.

Smallpox Checked.—There are at present only eight smallpox patients in the Isolation Hospital, and all of these are convalescent. There have been no new cases for two weeks, and it is hoped that the disease is effectually checked.

Decrease in Typhoid Fever Death Rate.—Fourteen years ago Chicago had the highest typhoid fever death rate of any large city in the world, amounting to 17.22 per 10,000 population. For 1904 the rate was only 1.92 per 10,000, which places Chicago among the lowest, in this regard, of all large cities.

The Unstable Laboratory.—It is now currently reported that the laboratory of the Health Department, which was reported, first, to have been moved to the city building at Michigan avenue and Fourteenth street and, then, to the Galbraith building at Franklin and Madison streets, will remain in its old quarters in the City Hall.

Acquire Property.—The Illinois Charitable Eye and Ear Infirmary has acquired one hundred feet additional frontage on Peoria street for $20,000, on which will be erected a fireproof addition to the present structure. The legislature recently appropriated $75,000 for this purpose.——The Washington Park Hospital has acquired a lot on Sixtieth street, 50 by 150 feet, on which an addition will be built.

The Week's Deaths.—During the week ended September 9, 500 deaths were reported, 10 less than for the previous week and 57 more than for the corresponding week of 1904. The respective annual death rates per thousand are 13.09, 13.35 and 11.98. Of the deaths, 147 were of infants under 1 year. Acute intestinal diseases caused 124 deaths; violence, including suicide, 55; consumption, 44; nephritis, 38; nervous diseases, 29; pneumonia, 28, and heart disease, 27.

IOWA.

Hospital Burns.—The Somers Hospital, Grinnell, was burned to the ground early on the morning of August 30. No casualties occurred, but the loss is about $3,000.

Carbolic Acid Sale Regulated.—The physicians of Des Moines are heading a movement to have a law passed by the legislature which will place carbolic acid on the same basis as morphin and other drugs as regards its sale. The necessity for this law is evident from the increasing number of cases of suicide from carbolic acid, which can be obtained at present without the restrictions under which cocain, morphin and other poisons are sold.

Medical Colleges Open.—The Sioux City College of Medicine opens for its fall term September 19. The new members of the faculty are: Dr. E. A. Jenkinson, professor of embryology; Dr. W. R. Mahood, professor of physiology; Dr. Isaac E. Nervig, assistant professor of anatomy; Dr. E. Ruel Wheeler, assistant professor of physiology, and Dr. Alexis M. Warren, professor of surgery.——Keokuk Medical College has added to its faculty Drs. Frank B. Hiller, Kahoka, Mo.; Frank P. Norbury, Jacksonville, and C. R. Armentrout, Keokuk.

Personal.—Dr. William G. Morton, Iowa Falls, has been appointed assistant surgeon at the Soldiers' Home, Marshalltown.——Dr. Channing E. Dakin has been appointed school physician of Mason City.——Dr. Lucius French, Davenport, who was recently operated on for gallstone disease, is making satisfactory progress.——Dr. William B. La Force and wife, Ottumwa, arrived from Europe August 30.——Dr. E. R. Walizer, Des Moines, was committed to the State Insane Hospital at Clarinda August 21.——Dr. Timothy J. Caldwell, ex-senator, Adell, is critically ill with rheumatic endocarditis.——Dr. A. A. Noyes, Mason City, has been made a life member of the Cerro Gordo County Medical Society.——Dr. Kirk Jaenecke, Clinton, sails for Europe from Montreal this month.

MARYLAND.

Personal.—Dr. Herbert E. Zepp has formed a partnership in practice with Dr. A. B. Glascock of St. Michaels, Talbot County.

Good Roads Physician.—Dr. V. M. Reichard of Fair Play is displaying talent and public spirit in building good and cheap roads in his section. In addition to a large practice he holds the office of road supervisor of his district. He finds it possible to construct macadamized roads, if there be no grading, for about $550 per mile. His crushed stone costs him about 45 cents a perch.

Baltimore.

Injured.—Dr. Edwin Geer, commander of the Maryland Naval Reserves and surgeon of the city fire department, was painfully injured September 6 by falling from a street car.——Dr. Joseph C. Wunder, in an effort to save a pigeon from a cat September 1, fell from a porch and broke his jawbone.

Personal.—Drs. William Green and Thomas H. Buckler are in Paris.——Dr. John McF. Bergland has gone to North Hatley, Canada, to hunt deer.——Dr. Ira Remsen has returned from his summer vacation at Northeast Maine in order to attend a meeting of the sewerage commission, of which he is a member.

Sewerage System.—The first practical step was taken September 7 by the commission engaging a board of three advisory engineers, to study the situation, to recommend the best method for disposal of sewage and to give an estimate of its cost. It was decided that the sewage before emptying into the bay or river shall be as pure as possible, to avoid possible injury to the oyster and fish industry of the state. The advisory engineers selected are Messrs. Rudolph Hering of New York, Frederick P. Stearns of Boston, and Samuel M. Gray of Providence, and they were requested to recommend a chief engineer to the commission, and to present their report not later than April 1, 1906, and earlier, if possible. Each of the three advisory engineers receives $5,000 as a fee, and additional $5,000 for outside work to be done and traveling expenses.

NEW JERSEY.

Camden's Health Report.—During August only 16 cases of contagious disease were reported to the Board of Health as follows: Scarlet fever, 5; typhoid fever, 2; diphtheria, 1, and tuberculosis, 8.

Diphtheria Epidemic.—An epidemic of diphtheria is reported at Port Republic, near Egg Harbor City. A number of deaths are said to have occurred, and public meetings are prohibited for the time being.

Hospital Report.—The report of Cooper Hospital, Camden, for August shows that 84 patients were admitted to the hospital during the month, and that there were 50 remaining September 1. In the dispensary 412 new cases were treated, and 1,352 visits were made.

Lower Death Rate.—The annual report of the New Jersey State Board of Health, just issued, shows that the death rate in the state per 1,000 of population, for 1903, was 15.87, or .04 less than for the previous year. There has been, generally speaking, a decrease since 1892, when the rate was 21.62 per 1,000. The births for the year were 37,242, or 18.47 per 1,000 of population, and the deaths 31,820.

NEW YORK.

Property Given Hospital.—At the gift fair for the German Hospital, Buffalo, a two-story brick house and lot at 934 Fillmore Avenue, valued at $5,000, was presented to the hospital.

More Insane Patients Transferred.—The transfer of 500 patients from King's County State Hospital to the Rochester State Hospital and Willard State Hospital was completed September 7. There were 290 patients transferred to the Rochester State Hospital and 210 to the Willard.

Buffalo Wants Better Water.—An advisory commission composed of expert engineers has been appointed to pass on plans for the improvement of the city water system. The board consists of Col. Thomas W. Symons, U. S. A., Rudolph Hering of New York, and Gen. George S. Field of Buffalo.

Buffalo Personals.—Drs. Roswell Park and Edgar McGuire, who sailed from Montreal on the *Victorian*, were obliged to transship when their steamer grounded in the St. Lawrence above Quebec, took train to New York and sailed on the *Caronia* next day.——Dr. Floyd S. Crego returned home from a nine months' visit to Europe.——Dr. Charles G. Stockton has returned from the Pacific coast.

New York City.

Seven More Suspects.—Seven voyagers on the steamer *Advance*, from Colon, were detained at quarantine and taken to Hoffman's Island for observation on account of high temperatures.

Fire at Child's Hospital.—On September 8 fire broke out in the wing of the Child's Nursery and Hospital, which has been leased by the Rockefeller Institute for Medical Research. Very little damage resulted.

Personal.—Dr. and Mrs. Charles Phelps arrived on the *Koenigin Luise* September 8.——Dr. James E. Newcomb's house was broken into by thieves, who carried away about $300 worth of jewelry.——Dr. M. C. O'Brien has returned after two months' vacation at Old Orchard, Maine.

Ambulance Accident.—The Kings County Hospital ambulance, while going at full speed, collided with a large touring car. Two of those in the touring car are expected to die. The ambulance surgeon escaped with slight injuries and explained that the high speed of the ambulance was deemed necessary on account of the condition of the patient he was taking to the hospital.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 26, 429 cases of tuberculosis, with 175 deaths; 329 cases of typhoid fever, with 20 deaths; 132 cases of diphtheria, with 15 deaths; 115 cases of measles, with 6 deaths; 54 cases of scarlet fever, with 2 deaths; 14 cases of cerebrospinal meningitis, with 15 deaths, and 3 cases of varicella.

Still Refuse Use of Mails.—The District Court of Washington, D. C., denied the application of the New York Institute of Physicians and Surgeons for a mandamus compelling the postmaster general to restore to the institute the use of the mails which he had previously denied by an official order. The court held that there was reasonable ground for the conclusions reached by the department.

New Graft Game.—There has been a man at work in the Bronx and elsewhere who calls on physicians, telling them of an imaginary ill. The doctor makes an examination and finds the man's heart on his right side. The patient seems alarmed and the physician becomes interested. Then the patient makes a strike for $2 or $5, promising to call again. This new game has been worked successfully.

Personal.—Dr. George W. Kunz has been appointed by the state department a delegate to the International Congress for the Study of Radiology and Ionization, to be held in Leige, Belgium, this month.——Dr. and Mrs. Charles E. Nammack arrived on the *Oceanic*, August 31.——Drs. W. B. Anderton and George W. Jacoby arrived on the *Kaiser Wilhelm der Grosse*, August 29.——Dr. and Mrs. Edwin Atwood sailed for Europe on the *Finland*, September 2.

To Kill Staten Island Mosquitoes.—The contract for draining the south marshes of Staten Island has been awarded and work will be begun at once. Petroleum-spraying machines were sent to infected spots, and the people were asked to cooperate with the authorities in combating these pests, and as a result there has been a marked decrease in the annoyance from mosquitoes. Dr. Doty expresses himself as confident that in due time the mosquito will be extirminated from this locality.

Keepers Locked Up with the Insane.—Two attendants of the Manhattan State Hospital for the Insane, on Ward's Island, who had four demented patients in charge, were locked up on September 1 by the Chicago police on the suspicion that they were trying to foist their patients as public charges on the state of Illinois. This has caused indignation at the hospital and at the office of the State Board of Alienists, as the men were provided with all credentials necessary to show that the patients were residents of the state of Illinois.

Record Month for Typhoid.—Between July 29 and August 30 the typhoid fever cases reported to the Board of Health numbered 1,128. This is the highest number of cases in one month for years. The cases in August of last year numbered 413. From Saturday, August 26, to Wednesday, August 30, 157 cases were reported, 98 of which appeared in Brooklyn, and during the month there have been 579 cases in that borough. Few are now appearing in the Bath Beach section, where they were especially numerous a few weeks ago.

Sue City for Poisoning.—As the result of the death of two men in the Cumberland Street Hospital, Brooklyn, after carbolic acid had been administered instead of whisky, by mistake, claims for damages amounting to $50,000 have been filed against the city. Both men were in a serious condition on the night of Dec. 27, 1904, when whisky was ordered and the nurse administered carbolic acid by mistake, but Superintendent Bacon claimed that the men would have died in any case and the carbolic acid only hastened the end.

Activity at Quarantine.—As the result of the discovery of cholera at Hamburg a conference was held at Quarantine, September 1, between Dr. Alvah H. Doty, health officer of the port, and representatives of the transatlantic steamship lines, at which it was agreed that extra precautions should be observed in receiving immigrants from German ports. All passengers from infected localities will be kept at the ports of embarkation under medical inspection for six days previous to departure. During the voyage to this port all steerage passengers will be subjected to medical examination and inspection twice a day, and everyone found ill will be isolated.——The Panama Railroad steamer *Havana* arrived at Quarantine August 31 with one case of yellow fever aboard. Five passengers with suspiciously high temperatures have been held and are being closely watched.——The Portuguese steamer *Peninsular*, which arrived in port September 1, had on board one case of smallpox. The passengers who were exposed to contagion were sent to Hoffman Island for observation.

Prospect of Filtered Water Supply.—A pamphlet entitled "Report on Filtration of the Water Supply of New York City," by Dr. Thomas Darlington, commissioner of health, has been published, which sets forth the reasons why a filtration plant should be installed for this city. Dr. Darlington presents a number of carefully prepared charts showing the reduction of typhoid mortality by the filtration of water. During the past five years the number of cases of typhoid fever in New York City are as follows: For 1900, 2,658 cases, with 718 deaths; for 1901, 2,748 cases, with 721 deaths; for 1902, 3,871 cases, with 765 deaths; for 1903, 3,671 cases, with 653 deaths; for 1904, 3,412 cases, with 661 deaths. During the same period the deaths from diarrheal diseases were: For 1900, 6,695; for 1901, 6,773; for 1902, 5,767; for 1903, 5,120, and for 1904, 6,527. It is probable that many of these deaths were due to contaminated water. Dr. Darlington estimates that the cost of filtering the water supply of 500,000,000 gallons daily would be $17,000,000, and the annual cost of operation $900,000.

Report of the Pneumonia Commission.—This commission, which was appointed in August, 1904, by the Board of Health, and began its work in October, has made public its first report. The commission consisted of Drs. Edward G. Janeway, William Osler, William H. Welch, T. Mitchell Pruden, Theobald Smith, Frank Billings, John H. Musser, L. Emmett Holt, Francis P. Kinnicutt, Thomas Darlington and Hermann M. Biggs. This report showed that the pneumonia germs were found in 95 per cent. of those examined. In discussing this question, it says that there is a possibility that pneumococci of greater virulence than those found in the mouth are inhaled with the air current, determining the onset of the disease. There would seem to be evidence that the pneumococcus may suddenly appear in the so-called normal mouth, that certain individuals carry the organism in their mouths for considerable periods of time, and that even those persons in whom the organism can not be demonstrated at every examination may harbor the pneumococcus in the less accessible portions of the respiratory tract. The study of the communicability of pneumonia led the commission to the conclusions that (1) "normal" individuals in whose mouths the pneumococcus is repeatedly found to be absent may acquire the organism by association with cases of pneumonia or with "positive normal" persons; (2) the handkerchiefs of pneumonia and "positive normal" cases may be regarded as means of transportation of the pneumococcus from person to person. A vigorous attempt was made to develop a serum which might be used either to ward off the pneumonia or to assist in ridding the blood of the germs after the disease had been contracted. They found that all pneumococci were agglutinated by means of pneumococcus immune serum; an immune pneumococcus serum was found capable of agglutinating various pyogenic streptococci, certain atypical organisms and several strains of the *Streptococcus mucosus capsulatus*; the serum of pneumonia patients varied in its power to agglutinate different pneumococci. Some strains were agglutinated, others not.

PENNSYLVANIA.

Personal.—Dr. Philip Y. Eisenberg, Norristown, was thrown from his carriage, September 5, and sustained painful but not serious injuries.

Bequest to Hospital.—The late Bethuel T. Hall has bequeathed to the Chester Hospital $3,000 as an endowment fund, the income of which is to be used in the general conduct of the hospital. The endowment is made in memory of his mother, Sarah Hall, and his aunt, Charlotte Cloud.

Oil City Working Against Tuberculosis.—The Grand View Institution, Oil City, which is devoted to the care and treatment of consumptives, has raised $6,500 and expects to erect an additional building to accommodate twenty-four patients. At present the institution accommodates fifteen patients, some of whom are living in tents.

Typhoid at Nanticoke.—An epidemic of typhoid fever has broken out in Nanticoke, near Wilkesbarre. Up until September 7, 224 cases had been reported. A committee appointed by the Board of Health to investigate the water supply found one house in which typhoid fever existed and from which drainage contaminated the streams leading to the reservoir. The official report of the investigation has not yet been made public.

Medical Society Pays Costs.—In the case of "Dr." A. Witman, charged by the Monessen Medical Society with practicing medicine without a license, the defendant was acquitted and the costs charged against the medical society. This peculiar result was attained because when the case was called the defendant did not appear. The prosecuting attorney insisted that his cash bail bond of $400 be forfeited, but the defendant's attorney, declaring that he would try the case without the defendant, obtained a favorable decision for his client.

Doctored Milk on the Decrease.—Reports of the Dairy and Food Commission during the past month show a decrease in the amount of doctored milk dispensed. Of a total of 460 samples of milk and cream taken by the Dairy and Food Commission agents for analysis, only 5 were such as to justify prosecution. Two years ago examination revealed that more than 33 per cent. of the samples taken were preserved with formaldehyd, boric acid, or were watered, skimmed or colored in violation of law. The total receipts of the Dairy and Food Commission during June, July and August were $13,527.14, nearly all of which was fines. The receipts since January only for oleomargarine and renovated butter licenses were $31,000.

Personal.—Dr. J. Edward Dickinson, Harrisburg, has been elected anesthetist on the staff of the Harrisburg Hospital. ——Dr. M. C. Womack has gone on duty as resident physician at the Reading Hospital.——Dr. Harry J. Bell, Dawson, is taking a trip to the Pacific coast.——Drs. A. E. Mahood and G. R. Reid have taken up their duties as internes at Hamot Hospital, Erie.——Dr. Jacob O. Knipe, Norristown, fell while alighting from a trolley car, dislocating his shoulder and injuring his right knee.——Dr. William H. Lauman, Mount Holly Springs, has had a cerebral hemorrhage.——Dr. Arthur S. Brumbaugh, Altoona, reached New York from Italy September 7.——Dr. Charles B. Hough, Ambler, sustained a contusion of the leg in a train collision, September 4, at Brush, Colo.——Dr. A. F. Brundage, Hazleton, who recently resigned as United States consul at Aix-la-Chapelle, has returned to his farm at Conyngham.

Philadelphia.

Love Powders Dispensed.—John Brady, a self-styled doctor, with offices at 1208 Pine street, was arrested, charged with selling powders that were warranted to restore connubial happiness. The doctor's patrons asserted that the powders did not possess the necessary charms. He was held in $500 bail for trial.

Hospital Reports.—During August, Mount Sinai Hospital treated 3,825 cases, of which 423 were accidents, and 71 patients were admitted to the wards.——Samaritan Hospital treated 1,678 patients in the dispensaries; 257 of these were due to accidents, and 72 were admitted to the wards.——The Germantown Hospital treated 1,755 cases in the dispensary, and 283 patients were treated in the wards..

Mutual Aid Society of County Medical Society.—The Philadelphia County Medical Society gives financial aid to the widows and orphans of its members and to members in distress. The society also has a private room in the Polyclinic Hospital devoted to the care of sick members. Any information concerning the aid association can be obtained from Dr. Joseph S. Neff, treasurer, 2300 Locust street.

Health Report.—The deaths from all causes for the week numbered 374. This is below the normal, as there were 434 deaths in the previous week and 400 in the corresponding week of last year. The principal causes of death were: Typhoid fever, 12; whooping cough, 5; tuberculosis, 55; cancer, 20; apoplexy, 15; tetanus, 1; heart disease, 23; acute respiratory diseases, 16; gastritis, 5; enteritis (under 2 years), 37; enteritis (over 2 years), 8; Bright's disease, 29; accidents, 22, and marasmus, 13.

Personal.—Dr. Harry L. Randal escaped serious injury in a train wreck in Denver, Colo., September 5.——Dr. Thomas C. Potter, Germantown, has sailed for Europe.——Dr. J. Frank Meade, while returning from Atlantic City in his automobile September 5, was struck in the face by a stone thrown by some miscreant and painfully injured.——Dr. Fairfax Irwin, who was detailed to study the cholera situation in Germany, has, by order of the United States Public Health and Marine-Hospital Service, postponed his departure.——Dr. Richard Flavel Woods narrowly escaped a serious accident, August 13, when his automobile ran into a ditch and turned completely over, burying Dr. Woods beneath it. Before he was rescued the flames of the exploding gasoline had caused serious burns.——Drs. Lawrence F. Flick, Joseph Walsh, Mazyck P. Ravenel and Daniel J. McCarthy sailed, September 16, to attend the International Congress on Tuberculosis in Paris.

Organizing the Profession.—The weekly roster of the medical organizations of Philadelphia has the following to say concerning the organization of the profession: "Consolidation of common interest has in recent years marked all of the activity, and the medical profession forms no exception to this world-wide movement. Its newest development tends to confirm the dictum that in union is strength. In the American profession, with the county society as the unit, membership therein leading through the state society to the national association, we find physicians organizing with an eagerness never before shown in any section of the land. Stimulated by this crusade, its latest phase is presented in a systematized enrollment of the practitioners of the great cities. The Philadelphia County Medical Society is a noteworthy example in that, through originating the "branch" feature, the membership is now at the 1,200 mark, with 1,800 in view. Branch societies will hold monthly meetings in, ultimately, every section of the city, and the scientific value of the meeting programs has risen just as steadily, so that systematized postgraduate courses of instruction for members may be the final object."

TENNESSEE.

New Infirmary in Memphis.—Drs. Frank D. Smythe and Bennett G. Henning, Memphis, are about to erect a sanitarium in Memphis, to cost $30,000.

College Merger.—The Tennessee Medical College, Knoxville, has decided to become the medical department of Lincoln Memorial University, Cumberland Gap, and the new hospital which is being erected by the college will be known as the Lincoln Memorial Hospital.

Personal.—Dr. Archibald L. Elcan, Memphis, was tendered a farewell dinner, September 2, by seven of his professional associates. He leaves for Los Angeles, Cal., in a few days. ——Dr. Raymond Wallace, Chattanooga, returned from Europe on the *Baltic* August 17.——Dr. Newman Taylor, Brunswick, has been appointed assistant physician at the Shelby County Asylum for the Insane, vice Dr. James K. Castles, Memphis, deceased.——Dr. Carroll M. Lovell, Dickson, has been appointed local surgeon of the Nashville, Chattanooga & St. Louis Railroad, vice Dr. Edward W. Ridings, deceased.——Dr. Richard M. Little, Dresden, was injured in a runaway accident August 10.

TEXAS.

New College Building.—The new building for the medical department for the Southwestern University, Dallas, will be ready for occupancy early in October.——The Fort Worth Medical University expects to erect a new medical college building, at a cost of from $40,000 to $50,000.

Banquet to Dr. Graves.—The Bexar County Medical Association tendered a farewell banquet to Dr. Marvin L. Graves, retiring superintendent of the Southwestern Insane Asylum, San Antonio, August 10, at which resolutions were adopted regretting his departure to accept the position of chair of theory and practice of medicine in the State University, and commending the wisdom of the State Board of Regents for its selection of Dr. Graves for this position.

Personal.—Dr. Q. Cincinnatus Smith has moved from Austin to San Diego, Cal.——Dr. Aug. D. Ferguson, Kingsville,

has moved to Dallas.——Dr. and Mrs. Robert L. Harris, Fulshear, have gone to New York.——Dr. Thomas O. Maxwell, for fifteen years first assistant physician at the State Lunatic Asylum, Austin, has been made superintendent of the Southwestern Insane Asylum, San Antonio, vice Dr. Marvin L. Graves.——Dr. James H. Eastland, Waco, has been appointed first assistant physician at the State Lunatic Asylum, Austin, vice Dr. Maxwell, transferred.——Dr. Willis E. Lowry has succeeded Dr. Shaver as state health officer at Laredo. ——Dr. M. G. Pierce, Hookerville, fell, August 6, dislocating his left hip. His advanced age renders the injury more severe.

GENERAL.

Plague in Hawaii.—A death from plague is reported from Waipahu, near Honolulu, August 30.

Personal.—Dr. Jean Guiteras, professor of tropical diseases and pathology in the University of Havana, has been made Dean of the University.

Quarantine Against New Orleans.—The governor of Jamaica has declared quarantine against New Orleans and the republic of Panama (including the Canal Zone), in view of the prevalence of yellow fever in those places.

THE YELLOW FEVER SITUATION.

New Orleans.—The teamsters went on strike last week, interfering materially with sanitary work.——New cases September 11, 38; deaths, none; total cases to September 11, 2,343; total deaths to September 11, 321; death rate, 13.7 per cent.; new cases September 4 to 11, inclusive, 240; deaths September 4 to 11, inclusive, 28.——Capt. B. F. Clayton, quartermaster, U. S. Army, has yellow fever.——An Italian died of yellow fever, his case not having been reported, and his relatives threw his body into Lake Ponchartrain.——The New Orleans *States* keenly scores Dr. Eugene Wasdin, United States Public Health and Marine-Hospital Service, because while in charge at Gulfport, Miss., he failed to find the yellow fever in the little place until it had existed for two or three weeks and until the Alabama officials inspected the town. The *States* asks for the withdrawal of the surgeon.——Assistant Surgeon William C. Rucker, United States Public Health and Marine-Hospital Service, is ill with yellow fever.——The attempt to change annual moving day from September 1 to October 1 had to be abandoned on account of legal obstacles. Arrangements were made, however, for proper fumigation of all premises where a change of tenants occurred.——The United States Public Health and Marine-Hospital Service estimates that, comparing the epidemics of 1878 and 1905 up to September 5, modern methods have saved New Orleans at least a million dollars.——The New Orleans Health Association has become a permanent organization.—— Fumigation of houses and educational mass meetings continue throughout the city.——Dr. Charles F. Chassaignac, New Orleans, has volunteered to take charge of the deplorable situation at Tallulah.

Louisiana.—During the week the epidemic has spread slowly. The following is the record of the week, outside New Orleans: Tallulah, 54 cases, 1 death; Lake Providence, 36 cases, no deaths; Patterson, 49 cases, 3 deaths; Kenner, 15 cases, 3 deaths; Hanson City, 23 cases, no deaths; Jefferson, 3 cases, no deaths; St. Rose, 4 cases, 10 deaths; Pecan Grove, no cases, 3 deaths; St. Bernard, 8 cases, no deaths; Venet, 1 case, no deaths; Kinlin, 2 cases, no deaths; Fisher's, 2 cases, no deaths; Amelia, 6 cases, no deaths. Belle Grove, 6 cases, no deaths; Moise, 2 cases, no deaths; Donaldsonville, 3 cases, no deaths; Pointe Celeste, 25 cases, 6 deaths; Woodlawn, 12 cases, 1 death; Greenwood, 1 case, no deaths; Bayou Boeuf, 4 cases, no deaths; Riverside, to September 8, 180 cases, 7 deaths; La Fourche, 4 cases, 2 deaths.——During the week there was grave rioting among the Italians at Patterson, who resisted the efforts of the sanitary officers.——Quarantines continue to be modified.——Up to September 6 there have been 1,075 cases of yellow fever, outside of New Orleans, in Louisiana, Mississippi, Alabama, Georgia, Florida and Missouri. There have been 125 deaths in the same territory, or about 12 per cent.——The Shreveport *Times* relates a case illustrating the hardships of local quarantines. A medical student of Shreveport, going home from New Orleans, was stopped at the bridge into the town and turned back. He got off the return train at Dubberly, Miss., where he was told it would not be safe to remain after dark. He walked to Sibley, another small town, where he was told to move on. He left that place in a livery rig. After a day or two more he arrived at Bossier City, near Shreveport, where he had a talk with Dr. E. Edgar Schumpert of the local board of health, who refused him admittance to the detention camp, as there was one at Bossier. At the Bossier camp Dr. Coleman told him that as he was not a resident of Bossier he had just one hour to leave the town. There the story ended. ——At Tallulah the infection is widespread. Dr. George H. Tichenor, Jr., New Orleans, in charge there, reported that he could not obtain public support for the necessary sanitary measures, and asked to be relieved. At last reports Dr. Charles F. Chassaignac of New Orleans had volunteered to take charge.

Other States.

Alabama.—A new relay camp has been established at Flomaton for the inspection and detention of passengers from Pensacola, Fla.

Arkansas.—In addition to the four members of the state board of health last week reported as having resigned, Dr. William Jackson, Jonesboro, has resigned later. Governor Davis has appointed the following new members: Drs. Joseph P. Runyan, president, Little Rock; Dr. Joseph P. Sheppard, secretary, Little Rock, and Dr. Robert A. Hilton, Eldorado. Later he added Dr. John R. Dibrell, Little Rock. The new board of health promptly declared absolute quarantine against Mississippi and Louisiana, even proclaiming: "No certificates recognized from either of these states." It declared that, as rapidly as possible, all four boundaries of the state would be guarded. Freight from the infected states will not be allowed to come in until fumigating stations have been established at the expense of the railroads. The railroads, furthermore, were ordered to maintain detention camps at all points where they cross the boundary. The new board then turned its attention toward persuading the various quarantined towns in Arkansas to abandon their restrictions, trusting entirely to the state quarantine. The Little Rock *Gazette* severely criticized the action of Governor Davis in refusing permission for a surgeon of the United States Public Health and Marine-Hospital Service to pass on a special train through a small stretch of Arkansas territory, even as an act of charity to a suffering community in Louisiana. Arkansas citizens keenly feel the disgrace of their state.——Pine Bluff has raised its local quarantine.——From Mammoth Springs there comes complaint that the militia, as quarantine guards, held a fast mail train at Thayer, Mo., for two hours, while the passengers were made to purchase health certificates at $1.25 each. Those who could not pay were put off the train, according to the Little Rock *Democrat*.——The Rock Island Railway has put in a fumigating plant at Bridge Junction, opposite Memphis.

Florida.—Two new cases were reported from Pensacola on September 5, two the following day, two on the 7th and on the 8th, 11 new cases and one death.——Dr. Stephen M. Gonzalez, in an interview in a local paper, said there was no yellow fever in Pensacola and that physicians were reporting it only for purposes of graft. He was arrested, tried and sentenced to 30 days in jail, sentence being suspended during good behavior.——Many new suspicious cases are under investigation.

Georgia.—On September 2 a man, recently arrived from Pensacola, Fla., developed yellow fever and was properly isolated, but died 3 days later.——By a vote of 5 to 3 the city board of health of Atlanta refused to quarantine against infected points. The medical members were reported as voting for quarantine.——A number of Georgia towns quarantined against Atlanta, and the State Board of Health had previously passed a resolution demanding that Atlanta quarantine against infected points. There are said to be 7,000 refugees in Atlanta.——On September 7 the State Board of Health quarantined the entire state against all infected points.

Indian Territory.—Following the report of a suspicious case at Maysville, the United States Public Health and Marine-Hospital Service has taken charge of the situation at that place.

Mississippi.—Dr. Joseph Goldberger, United States Public Health and Marine-Hospital Service, addressed the physicians of Natchez on methods of meeting the infection.——Having had demonstrated the failure of shotgun quarantine, Natchez is now fumigating and taking other rational measures to check the epidemic.——During the last week Natchez has reported 5 new cases, Gulfport 1, Mississippi City 2, Pearlington 1, Sharkey county 1, Corinth 1, Vicksburg 4 (25 in all), and Fostoria 1.——A negro from Gulfport eluded the quarantine guards at Pass Christian and entered that popular resort. He was later caught, and, it is reported, chained to a tree for two days, exposed to sun and rain and unable to protect himself from mosquitoes. As soon as the federal officers heard of this medieval brutality the negro was liberated and put in

the detention hospital.——It is reported yellow fever existed in Vicksburg as far back as July 20. At a meeting of Vicksburg business men, September 1, resolutions of confidence in the mosquito theory and the United States Public Health and Marine-Hospital Service were passed, and the local board of health was asked to modify its quarantine to accord therewith. This was done, and the United States Public Health and Marine-Hospital Service rules were adopted by the board of health, permitting the resumption of freight traffic.——Governor Vardaman, in a proclamation, has so fully accepted the conclusions of medical science that, in justice, some of his statements should be quoted. "The lesson of the Natchez fever ought to be taken well to heart by the people of the entire state. It shows conclusively that it is not enough to rely on quarantine vigilance alone. . . . It emphasizes the necessity of keeping ever closer watch on the internal conditions. . . . I have no hesitancy in expressing my firm conviction that the greatest danger is not so much in admitting the fever to our midst as in overlooking it after the first case has developed. . . . There is little danger when the first case is found and promptly handled in the recognized scientific manner."

Oklahoma.—Oklahoma has quarantined against Arkansas and the Indian Territory.

Tennessee.—Surgeon-General Wyman, United States Public Health and Marine-Hospital Service, replying to Memphis protests against Surgeon White's report of probable yellow fever in Memphis, wired to the state health officer as follows: "The report from yourself and from Secretary Hunter of the Mississippi state board is accepted here. I am satisfied with regard to the situation at Memphis as vouched for by yourself, Governor Vardaman and Secretary Hunter."——The State Board of Health has arranged for funds sufficient to maintain the quarantine until the coming of frost.

Texas.—State Health Officer Tabor addressed the McLennan County Medical Society on September 12.——Texas has quarantined against Memphis.——Galveston banks cashed the warrants necessary to keep the State Health Office in the necessary funds.

CANADA.

Winnipeg General Hospital.—The total number of patients treated in the Winnipeg General Hospital during the week ending August 19 was 326, of whom 201 were men, 81 women and 44 children; 60 out-patients were also treated.

Personal.—Dr. Allan Kinghorn, one of the house surgeons of the Toronto General Hospital, has been awarded the Johnston colonial scholarship in the University of Liverpool. He will take up original pathologic work, and succeeds a Canadian who held the scholarship last year.——Dr. J. Edwards of Grand Rapids, Mich., is visiting in Winnipeg.

Epidemic of Dysentery in Dawson.—A serious epidemic of dysentery is prevailing in Dawson and other points in the Klondike valley. Governor McInnes has convened a conference of the medical men of Dawson and outlying districts to ascertain, if possible, the cause of the disease and to inaugurate efforts to stay its ravages. Adults and children alike are suddenly prostrated with the disease, and numerous deaths have occurred.

Asylum Changes in Ontario.—Dr. Daniel Clark, for many years superintendent of the Toronto Asylum for the Insane, has resigned and has been succeeded by Dr. Charles K. Clarke, superintendent of the Kingston Asylum, who, in turn, is succeeded by Dr. E. Ryan, associate professor of clinical medicine in Queen's University. Dr. Charles E. Hickey, Morrisburg, Ont., has been appointed medical superintendent of the Coburg Asylum, replacing Dr. E. McNichol, who has been retired. Dr. John Williams, Lisle, Ont., has been appointed medical superintendent of the Asylum for Epileptics at Woodstock, Ont.

Canadian Medical Association.—The thirty-eighth annual meeting of the Canadian Medical Association was held at Halifax, August 22-24, and proved one of the best meetings in the history of the organization. The annual presidential address was delivered by Mr. John Stewart, M.B., Halifax; the address in surgery by Mr. Francis Caird, Edinburgh; the address in gynecology by Dr. Howard A. Kelly, Baltimore; the address in ophthalmology by Dr. J. W. Stirling, Montreal, and the address in medicine by Dr. D. A. Campbell, Halifax. The most important matter dealt with was the appointment of a special committee on reorganization, with Dr. A. McPhedran of Toronto as chairman. It was decided to meet in Toronto in 1906 at the same time as the meeting of the British Medical Association. The following officers were elected: President, Dr. Alexander McPhedran, Toronto; general secretary, Dr. George Elliott, Toronto; treasurer, Dr. H. Beaumont Small, Ottawa.

FOREIGN.

Esmarch Memorial.—The small town of Tönning, in Schleswig, Germany, was the scene August 6 of honors paid to F. von Esmarch, its famous son, when his statue was unveiled there. The municipality long ago placed a tablet on the house where he was born in 1823. The statue is more than life size and is a fine portrait of the great surgeon. It was erected by subscription, thousands wishing to show their appreciation of Esmarch's achievements in the systematic organization of first aid to the injured. It is not often that a scientific man is thus honored during his lifetime, but it is still less frequent for an untitled medical man to be the uncle by marriage of the reigning emperor of Germany. Esmarch married the Princess Henrietta of Schleswig-Holstein in 1872, one year before he published his views on the "Artificial Expulsion of Blood for Operations," describing the now familiar "Esmarch bandage."

Cholera in Germany.—It is reported by cable from Berlin that an official bulletin, issued September 8, announces that 19 new cases of cholera and 6 deaths occurred in the cholera-infected districts during the previous twenty-four hours. This makes a total of 123 cases and 39 deaths in the present epidemic. Berlin is placarded with posters warning householders to see that their premises are kept clean and the garbage properly disposed of, as cholera exists in eastern Prussia and communication with the affected districts can not be cut off. It is stated in one of the Berlin papers that some of the Berlin wholesale houses have sent circulars to their customers in infected towns instructing them not to communicate by mail with Berlin because of the danger of infection in the receipt of letters. It is also reported that cholera has broken out in Hamburg far from the points visited by Russian emigrants. An epidemic is feared, but it is being met by what is, perhaps, the most systematic preventive campaign ever undertaken. A sort of sanitary state of siege exists in the district that now extends from the river Oder northwestward to the Russian border, about 250 miles, and from Danzig to south of Posen, about 150 miles. But it is a state of siege in which all the inhabitants are auxiliaries of the medical authorities, and the only enemy is the terrifying cholera bacillus. The medical authorities are disseminating information by red placards, newspaper cautions and sanitary leaflets. Sanitary motor-boats patrol every stream, investigating river craft, seeing that waterside places and resorts are closed, and visiting the cholera stations established at intervals along the rivers. Every physician in the region is, in a sense, the agent of the Medical Council of War, which sits in Berlin. The commander-in-chief is Dr. A. Gaffky, and his special staff of 200 is being constantly increased. Conductors on the state railways are being taught the symptoms of cholera so as to be able to decide, when a person is sick on a train, whether the patient should be placed in a compartment by himself until a large town is reached where he can be sent off to a cholera station. Orders have been given to all employes who sell tickets or receive money from the public to disinfect their hands as often as possible. Dr. Fairfax Irwin, the surgeon in command of the Marine-Hospital Service at Philadelphia, has been ordered to Hamburg to study the cholera situation. He will be joined in Germany by Passed Assistant Surgeon McLaughlin, who is now stationed at Naples. Vigilant precautions are being taken at all the ports of entry of immigrants in this country. The cable and other reports speak of the epidemic in "West Prussia." This does not mean western Prussia, but the district of "West Prussia," bordering on Russia and the Baltic, in the northeastern part of the country.

Medical Consultant to the Muncipality.—As long ago as 1902 the local medical society of Cologne, Germany, petitioned the city council to appoint an *"arztlichen Beigeordneten"* to take charge of the matters for which municipal authorities are in the habit of asking the advice of physicians, or of putting through without any medical suggestions. Extraordinary expert knowledge and skill are required to deal properly with these matters, and the city should have a consultant constantly in its service. The authorities dismissed the appeal of the medical society at that time, but took it up again last year on the renewed solicitation of the society, and have finally created the office of a medical *Beigeordneten*, the first of its kind in any German city. His duties are defined as: 1, Suggestions for improved hygiene in all departments of municipal activity; 2, dwellings and health police, delivering of medical certificates, chairmanship of board of health and of board of oversight of police and dwellings; 3, vaccination; 4,

supervision of health in the schools, contagious diseases among scholars and teachers, medical school inspectors; 5, responsibility for imposition of sentences; 6, oversight of food adulteration commission; 7, oversight of schools, hospitals and other public buildings from a hygienic standpoint; 8, membership on boards in charge of orphan asylums, hospitals, disinfection service, bacteriologic laboratory and free dispensaries; 9, member of school deputation, member of commission for meat, market and pure food inspection; 10, public baths, with membership in board in charge; 11, member of boards of vital statistics and medical statistics; 12, medical examination of government employes when taken into the service or granted leave of absence or pensioned. The local medical society is jubilant over its success in the creation of this new post. It regards it as most important progress. Medical skill and knowledge are here diverted into a new field which, when filled by a physician of exceptional training in hygiene and general matters, can not fail to be of the greatest benefit for the public welfare. The secretary of the medical society, in his annual report, comments further to the effect that "this enlarging of the sphere of medical activity will compel the profession more and more to look up, over and beyond the narrow confines of purely medical matters to the grander tasks of the community and of the state. For these the physician—perhaps more than the members of any other profession—is peculiarly fitted by his general and special training. Every physician now should strive to perfect himself more and more in general training, and to work with the greatest perseverance to help in solving the questions that confront the community and the state. This grand aim must not be obscured," he adds, "by the recent efforts of the authorities to aid in perfecting the various medical specialties." The *Münch. med. Wochft.* states that Dr. Krautwurst, hitherto *Kreisarzt* for the Cologne district, has been appointed to the position.

New Prussian Law in Regard to Communicable Diseases.—The text of the new and long anticipated law is given in the *Deutsche med. Wochft.* for July 20 and 27. It is evidently a compromise measure. The original bill required compulsory declaration of cases of tuberculosis and of venereal diseases, but this was amended to declaration of cases of death from tuberculosis. Declaration of cases of venereal disease was first amended to read "in military circles," and then the clause was finally dropped altogether. The law is in eight sections. The first contains the regulations in regard to compulsory declaration of cases and deaths. According to previous laws this was required only for six diseases: leprosy, cholera, spotted typhus, yellow fever, plague and smallpox, but the present law adds 16 to the list; diphtheria, epidemic cerebrospinal meningitis, puerperal fever, trachoma, relapsing fever, dysentery, scarlet fever, typhoid, anthrax, glanders, hydrophobia and bites from rabid or suspected animals, poisoning from meat, fish or sausages, and trichinosis. The declaration must be made within twenty-four hours after learning of the case, the deposition to be made to the police authorities. Also every death from tuberculosis. The physician called to the case is held responsible for the declaration, otherwise the head of the household, the person taking care of the sick one, the householder and the official verifying the disease. The second section is devoted to the determination of the disease. If the sick person is in the care of a physician, the officials wishing to ascertain the facts in the case are not allowed to enter if the attending physician fears injury to the health or life of the patient from their entrance. Opportunity for objection should be given the attending physician before the officials enter. In case of puerperal fever or suspicion thereof, the officials must obtain permission from the head of the household before they can enter. On suspicion of typhoid or glanders, postmortem examination may be required if the attending physician regards it as necessary to complete the diagnosis. In case of diphtheria, trachoma and scarlet fever the local police authorities are required to determine the disease only in the first few cases, and only when they have not been already declared by a physician. The authorities are empowered to extend these regulations to include other diseases when they assume an epidemic form. The third section of the law is devoted to prophylactic measures which are defined in detail for each disease, leaving nothing to the judgment of the local authorities. In respect to diphtheria, compulsory isolation is required, but children need not be taken to a hospital or other place of isolation against the wishes of the parents if the attending physician or the medical official thinks that sufficient isolation can be realized at home. In puerperal fever the midwife or obstetric nurse is to be informed of the presence of the disease at once, and she must refrain from attendance on any other childbirth during and for eight days after leaving the first case, and then only after thorough disinfection of her body, clothing and instruments, under instructions from the medical official, who is empowered to shorten the interval at his judgment. In typhoid fever, besides the usual measures of isolation, declaration of case and location, and disinfection, all public gatherings may be forbidden if the disease assumes an epidemic character. Six months' imprisonment or a fine of $150 is the penalty for using or allowing others to use articles for which disinfection is required before the disinfection has been done. The penalty for disregard of the measure requiring compulsory declaration by the physician or other responsible person is arrest or a fine of about $38, which is also imposed for preventing the enforcement of the official measures or the entrance of the medical officials. One section of the law defines the details of indemnification of parties for articles destroyed or injured by the officials in their prophylactic duties. The claim for damages must be presented to the local police authorities within a month, although further delay may be granted under certain circumstances. Articles to be destroyed or injured by the officials must be appraised by experts before their destruction.

Marriages

A. E. CARNEY, M.D., Owasa, Iowa, at Asbury Park, N. J., August 23.

ARTHUR G. NEIGHBOR, M.D., to Miss Minnie La Grue, both of Fowler, Ind.

PHIL R. POLK, M.D., to Miss Hattie Hamilton, both of Silver Creek, Miss.

W. H. STEELE, M.D., Hastings, Neb., to Miss Alice Kimball of Chicago, August 27.

BERT N. ESTABROOK, M.D., to Miss Olive M. Bast, both of Detroit, Mich., August 29.

CARL O. IMOBERSTAG, M.D., to Miss Mabel E. Sperber, both of Toledo, Ohio, August 30.

EARNEST EMPEY, M.D., Billings, Mont., to Miss Hallie Spear of Omaha, August 30.

GUY H. HUTCHINS, M.D., Bowdoinham, Maine, to Miss Hortense Bradford, September 6.

GEORGE A. PUGH, M.D., Kenosha, Wis., to Miss Nellie Ball of Stratford, Ont., August 29.

WESTON H. RICE, M.D., to Miss N. Nelle Hopkins, both of Burlington, Vt., September 2.

W. S. POLK, M.D., Oakvale, Miss., to Miss Beulah Williamson of Goss, Miss., at Society Hill.

FRED RODERICK DEW, M.D., to Miss Bertha Blanche Young, both of Salem, W. Va., August 30.

HEDLIE V. TWEEDIE, M.D., Baltimore, to Miss Edith D. Hutson, at Rawlings, Md., September 6.

GEORGE M. DECHERD, M.D., Austin, Texas, to Miss Pansy Green of Granger, Texas, August 30.

CHARLES MARTIN WOOD, M.D., Decatur, Ill., to Miss Edith Loose of Illiopolis, Ill., September 12.

BLANCHARD B. PETTIJOHN, M.D., Indianapolis, to Miss Zelda Klingler of Zionsville, Ind., August 30.

PERN JEFFERSON BIDWELL, M.D., Toledo, Ohio, to Miss Virginia Moyer of Colfax, Ohio, August 29.

T. LEE VAN GIESEN, M.D., New Castle, Pa., to Miss Mabel E. Manbeck of Lebanon, Pa., August 30.

MAURICE M. REICHARD, M.D., Philadelphia, to Miss Frieda Deutsch in New York City, September 3.

WILLIAM A. BRIGGS, M.D., Bowling Green, Ky., to Miss Ida Mai Harrison of Alton, Ind., September 6.

BYRON G. MONKMAN, M.D., Portland, Ore., to Miss Nellie M. Sauer of Bay City, Mich., September 1.

MONT R. FARBAR, M.D., Greensboro, N. C., to Miss Annie Pleasants of Dilworth, N. C., September 14.

GEORGE GILL MULHERON, M.D., Nut Bush, Tenn., to Miss Lillie Mai Walker of Durhamville, Tenn., September 6.

LEROY PHILIP KUHN, M.D., Palmyra, Wis., to Miss Bessie Margaret Patterson of Chicago, September 9.

JULIUS W. BOIARSKY, M.D., Huntington, W. Va., to Miss Florence Greenwold of Cincinnati, September 5.

RALPH K. KEENE, M.D., Wessington Springs, S. D., to Miss Wilma H. Rouse of Lakefield, Minn., August 29.

FRANK FOULK, M.D., Des Moines, Iowa, to Miss Wallace of Independence, Iowa, at Des Moines, September 3.

WILLIAM A. WILLIAMS, M.D., to Miss Edna Z. Bacon, both of Hurne, Mo., at Kansas City, Mo., September 6.

FRED ALBERT SIMMONS, M.D., Brockton, Mass., to Miss Geneva A. Cobb of Providence, R. I., September 6.

EDWARD C. KOENIG, M.D., North Tonawanda, N. Y., to CAROLINE M. OSBORNE, M.D., at Phelps, N. Y., August 30.

P. ELWOOD STIGERS, M.D., Hancock, Md., to Miss C. Virginia Barker of West Virginia, at Ellicott City, Md., August 21.

BENJAMIN TROWBRIDGE TILTON, M.D., New York City, to Miss Anna Billings Griggs of Tacoma, Wash., September 14.

PATIENCE S. BORDEAU, M.D., Grand Rapids, Mich., and Henry N. Fisco of New York City, at Grand Rapids, September 6.

CLARENCE PHILIP OBENSCHAIN, M.D., Kerr's Creek, Va., to Miss Alice Virginia Kirkpatrick at Alone, Va., September 6.

PERRY J. PAYNE, M.D., Jamestown, Pa., to Miss Jean L. Veach of New Castle, Pa., at Chautauqua, N. Y., August 30.

NEIL CAMPBELL MONROE, M.D., Rogers City, Mich., to Miss Bessie Kennedy Whiteley of Millersburg, Mich., September 6.

ARTHUR PRESTON CLARK, M.D., New Hartford, N. Y., to Miss Mabel Angeline Robinson of Watertown, N. Y., August 30.

BLANCHE ROSALIE SLAUGHTER, M.D., Washington, D. C., and Mr. Baxter Morton of New York City, at Lynchburg, Va., September 6.

J. SCOTT MCLEOD, M.D., Boston, Mass., to Miss Minnie M. Detterick of Las Vegas, New Mexico, at New York City, September 9.

Deaths

Ephraim J. McCollum, M.D. Jefferson Medical College, Philadelphia, 1853, the oldest practitioner of Seneca County, Ohio, for many years a member of the American Medical Association and the Ohio State Medical Association; an honorary member of the Northwestern Ohio and Seneca County medical societies, beloved and esteemed by all, died at his home in Tiffin, Ohio, September 7, from heart disease, after an illness of four days, aged 85. A year ago the entire medical fraternity of the county celebrated the golden anniversary of Dr. McCollum's entry into practice and presented him with a silver loving-cup.

Milton H. Hardy, M.D. New York University, New York City, 1887, a member of the American Medical Association, and of the Salt Lake County Medical Society; superintendent of the State Mental Hospital, Provo, Utah, from 1896 to June, 1905; a prominent Mormon alienist; formerly superintendent of schools of Utah County, and later territorial superintendent of schools, died at his home in Provo August 23 from valvular heart disease, after a long illness, aged 60.

Siegfried Martus, M.D. New York University, New York City, 1889, New York City, member of New York County Medical Society, New York County Medical Association, Harlem Medical Association, German Medical Society, for fourteen years on the staff of Mt. Sinai Hospital, and medical adviser of the Hebrew Technical Institute, died at New York Hospital a short time after an operation for appendicitis, August 31, aged 43.

John Milton Davies, M.D. Penn Medical University, Philadelphia, 1854, said to have been the oldest practitioner in western Pennsylvania, an assistant surgeon and surgeon of the Ninth New Jersey Volunteer Infantry, post surgeon at Newberne, N. C., and acting mayor of that city during the Civil War, city physician of Erie, Pa., in 1872 and 1873, died at his home in Warren, Pa., September 5, from senile debility, aged 77.

Simon Mower Whistler, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1866, acting assistant surgeon in the Army during the Civil War; a member of the Medical Society of the State of Pennsylvania, died at his home in Harrisburg, August 17, after an illness of six weeks, aged 63.

Jacob S. Ammon, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868, sometime vice-president of the Banks County Medical Society; surgeon during the Civil War, died at his home in Reading, Pa., September 5, after an illness of more than a year, aged 68.

William M. Late, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1855, of Bridgeport, Harrison County, W. Va., died at the home of his daughter in Bordentown, N. J., September 5, after an illness of two weeks, aged 72.

Samuel H. Fee, M.D. Faculty of Medicine of Queen's University, Kingston, Ont., 1862; health officer of Kingston; formerly in the United States Army, and an alderman of Kingston, shot himself while suffering from melancholia August 31, aged 65.

Frederick William Billart, M.D. (Years of Practice) Indiana, 1897, for more than half a century a practitioner of Indiana, died from intestinal obstruction at his home in Chrisney, Ind., September 4, after an illness of two days, aged 73.

Joseph H. Green, M.D. Medical Department of the University of Cincinnati, 1860, one of the oldest practitioners of Miami County, Ohio; a surgeon in the Civil War, died at his home in Troy, September 6, aged 72.

George E. Carey, M.D. Medical Department of Western Reserve University, Cleveland, Ohio, 1885, of Salina, Pa., died at the home of his mother in Maple Shade, Pa., August 26, after an illness of four years, aged 47.

David Arthur Titus, M.D. Michigan College of Medicine and Surgery, Detroit, 1892, of Detroit, Mich., died at Port Arthur, Mich., August 15, from brain abscess following typhoid fever, after a short illness, aged 35.

James K. Castles, M.D. Memphis (Tenn.) Hospital College, 1900, assistant physician at the Shelby County Poor and Insane Asylum, died at his home in the First Civil District of Shelby County, August 15.

Henry Utley, M.D. New York University, New York City, 1899, surgeon of the Seventy-fifth Illinois Volunteer Infantry during the Civil War, died at the home of his son in Sterling, Ill., April 27, aged 82.

Charles Edwin Parker, M.D. University of Vermont Medical Department, Burlington, 1889, member of the Massachusetts Medical Society, died in Princeton, Mass., July 10, from carcinoma, aged 41.

Neal Hardy, M.D. University of Wooster Medical Department, Cleveland, Ohio, 1873, of Canton, Ohio, died suddenly at Hicksville, Ohio, August 28, from heart disease, aged 58.

William W. Bass, M.D. Berkshire Medical College, Pittsfield, Mass., 1835, surgeon during the Civil War, died at his home in Dorchester, Boston, July 21, after a long illness, aged 95.

William B. Cooper, M.D. Medical College of Ohio, Cincinnati, 1860, died at his home in Kokomo, Ind., from acute nephritis, September 6, after an illness of only two days, aged 70.

John D. Finnegan, M.D. University of Vermont Medical Department, Burlington, 1893, formerly of Ogdensburg, N. Y., died at his home in Moira, N. Y., August 26, aged 48.

John S. Curtis, M.D. Medical College of Ohio, Cincinnati, 1878, of Washington Court House, Ohio, died near Sedalia, Ohio, August 20, from heart disease, aged 55.

George W. Duncan, M.D. University of Louisville Medical Department, died from cancer of the face at his home in Franklin, Ky., September 8, aged 80 years.

John B. Gilman, M.D. University of Vermont Medical Department, Burlington, 1884, died at his home in West Pawlet, Vt., September 1, after a short illness.

Samuel T. Dickinson, M.D. Jefferson Medical College, Philadelphia, 1849, died at his home near Milford, Va., September 5, after a lingering illness, aged 76.

William E. Tarbell, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1868, died at his home in Athens, Maine, August 18, aged about 60.

E. H. Yancey, M.D. Macon, Ga., 1869, surgeon in the Confederate service during the Civil War, died at his home in Covington, Ga., July 1, aged 70.

Horatio Woodbury, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1882, died at his home in South Paris, Maine, July 9.

George Rice, M.D. Medical Institution of Yale College, New Haven, Conn., died at his home in South Framingham, Mass., April 18, aged 67.

Clement F. Ellerbrock, M.D. Baltimore Medical College, 1900, died at Deming, N. M., from tuberculosis September 2, aged 27.

Charles F. Dilley, M.D. Rush Medical College, Chicago, 1863, died at his home in Spickard, Mo., September 3, aged about 75.

George Henry, M.D. Long Island College Hospital, Brooklyn, 1860, died in Denver, Colo., April 23 from heart disease.

James A. Francisco, M.D. (Examination, Ohio), died recently at his home in Port Clinton, Ohio.

Carolyn Dewey Beebe, M.D. Colorado, 1903, died in Denver, Colo., March 13, aged 39.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE USE OF CARBOLIZED SPONGE TENTS.

GRAND RAPIDS, MICH., July 25, 1905.

To the Editor:—If at all, in what uterine derangements would you consider it legitimate and good treatment, to use carbolized sponge tents? A. B.

ANSWER.—The ease with which the aseptic dilator may be substituted for any legitimate purpose for which the sponge tent was formerly used makes the use of the latter no longer justifiable or desicable. Many prominent gynecologists and obstetricians never employ them. The writer of a well-known textbook on gynecology says: "I would limit their employment altogether to obstetric cases," while an examination of a number of recent authoritative text-books on obstetrics reveals no mention of sponge tents. Lest a biased opinion be given the dealers in surgical supplies were consulted and asked: "How often do you have a call for sponge tents?"

No. 1: "Almost every day."

No. 2: "We almost never have a call for sponge tents."

No. 3: "Frequently."

"Who is ordering them, city obstetricians and gynecologists or country practitioners?"

No. 1: "I might say neither; the call comes almost entirely from midwives. Some buy from four to six dozen at a time."

No. 2 said he had no midwife practice.

No. 3: "Our call comes almost entirely from the country."

The reader may judge for himself the use to which these articles are put. No efforts were made in any case to have the tents kept surgically clean.

An aseptic non-dilatable smooth foreign body may do damage if left in the uterus, a rough dilatable sponge tent whose fingers will insinuate themselves into the endometrium will do much more harm, and such a structure, septic as a sponge tent must always be considered, has dangers in its use beyond our power to estimate. It should be considered a relic of bygone days and important only in the history of the pre-aseptic period.

BOOKS ON MICROSCOPIC DIAGNOSIS.

SYLACAUGO, Ala., Sept. 7, 1905.

To the Editor:—Will you kindly advise me as to the best textbook or compend suited to the use of a busy country doctor who has to do most of his own microscopy. I want a good, practical, abridged text giving each step in the technic clearly and concisely. H. L. CASTLEMAN.

ANSWER.—Cabot's "Clinical Examination of the Blood" ($3.50, Wm. Wood & Co., New York) is excellent on the blood, and so is Ogden's "Clinical Examination of the Urine" ($3.00, W. B. Saunders & Co., Philadelphia), on the urine. Von Jaksch's "Clinical Diagnosis" ($6.50, J. B. Lippincott & Co., Philadelphia) is the most complete book on the whole subject, but is probably too technical. Simon's "Manual of Clinical Diagnosis" ($4.00, Lea Brothers & Co., Philadelphia) is probably best adapted to our correspondent's needs.

State Boards of Registration

COMING EXAMINATIONS.

Central District Indian Territory Board of Medical Examiners, South McAlester, October 2. Secretary, W. B. Caldwell, Hugo.

Utah State Board of Medical Examiners, Salt Lake City, October 2. Secretary, R. W. Fisher, Salt Lake City.

Board of Medical Examiners of Arizona, Phoenix, October 2-3. Secretary, A. Martin, Phoenix.

Idaho State Board of Medical Examiners, Boise, October 3. Secretary, J. L. Conant, Jr., Genesee.

Indiana Board Medical Registration and Examination, State House, Indianapolis, October 3. Secretary, W. T. Gott, Crawfordsville.

Board of Medical Examiners of Montana, The Capitol, Helena, October 3. Secretary, W. C. Riddell, Helena.

North Dakota State Medical Examining Board, Grand Forks, October 3. Secretary, H. M. Wheeler, Grand Forks.

Minnesota State Board of Medical Examiners, Old Capitol Building, St. Paul, October 3-5. Secretary, C. J. Ringnell, Minneapolis.

Rhode Island State Board of Health, State House, Providence, October 5-6. Secretary, G. T. Swarts, Providence.

Regular Board of Medical Examiners of Georgia, The Capitol, Atlanta, October 9. Secretary, F. D. Paterson, Cuthbert.

Michigan State Board of Registration in Medicine, Capitol Building, Lansing, October 10. Secretary, B. D. Harison, Sault Ste. Marie.

State Medical Board of the Arkansas Medical Society, Little Rock, October 10. Secretary, J. P. Runyan, Little Rock.

State Board of Medical Registration of Vermont, Y. M. C. A. Hall, Burlington, October 10-12. Secretary, W. S. Naya, Underhill.

Kansas State Board of Medical Registration and Examination, State House, Topeka, October 10-11. Secretary, G. F. Johnston, Lakin.

Board of Medical Supervisors of Washington, D. C., Washington, D. C., October 12. Secretary, W. C. Woodward, Washington, D. C.

Board of Medical Examiners of State of Texas, San Antonio, October 17. Secretary, T. T. Jackson, San Antonio.

State Board of Medical Examiners of New Jersey, Trenton, October 17-18. Secretary, E. L. B. Godfrey, Camden.

State Board of Health of Illinois, The Great Northern Hotel, Chicago, October 18. Secretary, J. A. Eagan, Springfield.

Louisiana State Board, New Orleans, October 20-21. Secretary, F. A. Larue, New Orleans.

Washington July Report.—Dr. C. W. Sharples, secretary of the Washington State Medical Examining Board, reports the written examination held at Seattle, July 5-7, 1905. The number of subjects examined in was 17; total number of questions asked, 100; percentage required to pass, 75, and 70 in case of applicants who graduated ten years previous. The total number of candidates examined was 94, of whom 77 passed and 17 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Rush Med. Coll. (1885) 87.5; (1900) 76.5; (1902) 87, 89.2; (1903) 77, 81.8, 84.6; (1904) 89.7; (1905) 90.7.		
Keokuk Med. Coll. of P. and S.	(1905)	83
Harvard University	(1902) 88.8; (1904) 86; (1905)	83
Bennett Med. Coll., Chicago	(1893) 78.6; (1905)	84.3
Med. Coll. of Virginia	(1896)	87
University of Virginia	(1905)	76.4
Creighton Med. Coll	(1904) 80; (1905)	81
Lincoln Med. Coll	(1901)	76.4
University of Buffalo	(1882)	77.2
Omaha Med. Coll	(1895) 78.4; (1897) 80.1; (1900)	75.3
Vanderbilt University Med. Dept	(1904)	89
Kansas City Med. Coll. (1893) 74.2; (1896) 82; (1900) 79.5; (1905) 76, 78, 81.7.		
Medico-Chirurgical Coll., Kansas City	(1905)	75
College of P. and S., St. Louis	(1895)	71.5
St. Louis University	(1904) 78; (1905)	77.1
University of Minnesota (1892) 80.7; (1897) 82.2; (1903) 80.1; (1904) 90; (1905) 85.5.		
Physio-Medical Coll. of Indianapolis	(1893)	70
College of P. and S., Chicago (1902) 75; (1904) 85; (1905) 78.5, 82		
Cooper Med. Coll	(1904) 84; (1905) 82.1, 84.1, 86	
Ohio Med. University	(1897) 80.1; (1900)	75.5
University of Michigan	(1902) 83; (1904)	92
Hahnemann Med. Coll., Chicago	(1898) 84.7; (1904)	87
Northwestern University (1899) 76.6; (1901) 93; (1902) 83.4; (1905) 81.2.		
University of Leipzig	(1892)	90
University of California	(1904)	83
Bellevue Med. Coll	(1890)	70.5
Ensworth Med. Coll	(1904)	77.5
University of Pennsylvania	(1902)	83.5
Medical Coll. of Indiana	(1903)	76.8
Johns Hopkins University	(1902)	86.1
University of Southern California	(1903)	75
Trinity Med. Coll	(1900)	81
Tokio Med. Coll	(1896)	81.4
University of Oregon	(1905)	78, 90
Detroit Coll. of Medicine	(1895) 88.7; (1898)	76.2
College of P. and S., San Francisco	(1905)	78
McGill University	(1899)	89
Sioux City Med. Coll	(1901)	82.5
Columbia University	(1886)	91.3
Kentucky School of Med	(1903)	78.5

Washington (D. C.) July Report.—Dr. William C. Woodward, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, D. C., July 13, 1905. The number of subjects examined in was 17; the total number of questions asked, 80; percentage required to pass, 75. Forty candidates were examined, of whom 31 passed and 9 failed. Representatives of the following colleges passed:

PASSED. College.	Year Grad.	Per Cent.
*Columbian University	(1904)	90.87, 85.56
Georgetown University	(1905)	93.96, 84.46
George Washington University, (1905) 90.18, 86.12, 84.75, 79.40, 78.56, 82.78, 86.12, 81.75, 81.09, 88.06, 91.15, 80.56, 75.56, 85.28, 76.28, 90.65, 79.87, 86.37, 79.06, 91.56, 92.31, 85.03, 76.31, 84.15.		
Hahnemann Medical College, Philadelphia	(1905)	90.59
Howard University	(1905)	75.34, 81.75

*Now the George Washington University.

Wisconsin July Report.—Dr. J. V. Stevens, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held at Madison July 11-13, 1905. The number of subjects examined in was 13; total number of questions asked, 130; percentage required to pass, 75. The total number of candidates examined was 81, including one osteopath. Of these 71 passed. Representatives of the following colleges passed:

PASSED.

College.	Year Grad.	Per Cent.
College of P. and S., Chicago (1905) 80.3, 80.8, 81.7, 81.8, 82.4, 83, 83, 83.2, 84, 84.7, 84.8, 85, 86.2, 88.2, 91.4		
College of P. & S., Milwaukee (1905) 78.8, 79.3, 81, 82.3, 82.5, 82.7, 83.2, 83.8, 84.3, 84.6, 86		
Rush Med. Coll. 75.8, 79.9, 81.7, 83.6, 84.4, 85.1		
Northwestern University, Chicago, 80.3, 81.3, 81.7, 82.5, 82.6, 83.8, 84, 84.5, 85.8, 86.4, 86.7, 88.7		
Milwaukee Med. Coll. (1905) 75, 75.2, 76.5, 77.5, 78.9, 81, 81.6, 82, 83.9, 84, 85.1, 85.3, 86.2, 86.5, 87, 87.8, 88.5.		
Johns Hopkins University ..... (1904 88.1, (1905)		86.2
University of Michigan Med. Dept. ..... (1904)		88.1
University of Michigan Med. Dept. (Homeo.) .... (1904)		83
Queen's Med. Coll., Canada ..... (1904)		86.7
University of Minnesota ..... (1905)		83.5
American Med. Miss. Coll., Chicago ..... (1904)		85
Washington University, St. Louis ..... (1905)		82
National Med. Coll., Chicago ..... (1899)		84.9
Howard Med. Coll. ..... (1904)		82.4

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 9:

Krebs, Lloyd LeR., asst.-surgeon, ordered to duty with 1st battalion Field Artillery from Presidio of San Francisco to Camp of Instruction at the Henry Ranch, San Luis, Obispo County, Cal.

Moseley, E. B., deputy surgeon general, leave of absence extended thirty days.

Kieffer, Chas. F., surgeon, granted two months' leave of absence.

Asst. Surgeons Flagg, Charles E. B. (November 1), Lewis, Wm. F. (November 1), Kirkpatrick, Thos. J. (December 1), Chamberlain, W. P. (February 1), Brownlee, Chas. Y. (November 1), Pyles, Will L. (November 1), Talbott, E. M. (November 1), Clark, John A. (November 1), Coffin, Jacob M. (November 1), Fife, James D. (November 1), Powell, Wm. A. (November 1), Kilbourne, E. D. (November 1), and Grissinger, Jay W. (November 1), are relieved from duty in the Philippines Division, to take effect on the dates opposite their names, and will proceed on first available transport to San Francisco, and on arrival report by telegraph to the Military Secretary of the Army for further orders.

Asst.-Surgeons Winn, Robert N., Fort McDowell, Cal.; Ashburn, P. M., Fort Missoula, Mont.; Peed, Geo. P., General Hospital, Fort Bayard, N. M.; Thornburgh, R. M., Fort Warren, Mass.; Shepard, John L., Army General Hospital, Presidio of San Francisco; Jean, Geo. W., Fort Adams, R. I.; Siler, Jos. F., Fort Meade, S. D.; Van Dusen, Jas. W., West Point, N. Y.; Reilly, John J., Fort Slocum, N. Y.; Roberts, Wm. M., Fort Sill, O. T., and Van Poole, G. McD., Fort Stevens, Ore., are relieved from duty at the stations designated after their names, and will proceed to San Francisco, and take transport to sail about October 5 for Manila, P. I., where on arrival they will report in person to the commanding general Philippines Division for assignment to duty.

Gilchrist, H. L., asst.-surgeon, granted fifteen days' leave of absence.

Thornburgh, R. M., asst.-surgeon, granted thirty days' leave of absence.

Van Dusen, Jas. W., asst.- surgeon, left West Point, N. Y., on leave of absence to September 25.

Pomeroy, Wm. H., contract surgeon, returned to duty at Springfield Armory, Mass., from ten days' leave of absence.

Merrick, John N., contract surgeon, returned to Fort Missoula, Mont., from practice march with command, to Flathead Indian Reservation.

Foster, Douglas E., dental surgeon, left Fort Jay, N. Y., and arrived at his home, Warrensburg, Mo., for annulment of contract.

Carpenter, Alden, dental surgeon, arrived at Vancouver Barracks, Washington, from detached service at Fort Walla Walla, Washington, and Fort Columbus, Washington.

Slayter, Ernest F., contract surgeon, returned to duty at Fort Hancock, N. J., from leave of absence.

White, J. S., contract surgeon, left Fort Snelling, Minnesota, on detached service with 7th Battalion, Field Artillery, en route to target range near Sparta, Wis.

Wertenbaker, C. L., contract surgeon, returned to duty at Madison Barracks, N. Y., from practice march to Ogdensburg, N. Y., with 3d Battalion, 23d Infantry.

Whitney, W., contract surgeon, arrived at Columbus Barracks, Ohio, for duty, from detached service with detachment of recruits en route to Fort McDowell, Cal.

Byars, Caspar R., contract surgeon, will proceed to Camp J. P. Story, Fort Sill, O. T., for duty, and on the breaking up of 2d Prov. Regiment, Field Artillery, will accompany 2d Battalion Field Artillery to his station, Fort Sam Houston, Texas.

Lauderdale, C. E., dental surgeon, leave of absence extended one month.

Waddell, R. W., dental surgeon, left Fort Leavenworth, Kans., for Fort D. A. Russell, Wyo., for duty.

Whinnery, Jean C., dental surgeon, reported at Fort St. Michael, Alaska, for duty.

Lemmon, Robert, contract surgeon, returned to duty at Fort McKinley, Me., from leave of absence.

Branch, F. D., contract surgeon, granted leave of absence for fourteen days.

Navy Changes.

Changes in the Medical Corps U. S. Navy, for the week ending September 9:

Crunwell, A. G., surgeon, detached from the Naval Hospital, New York, N. Y., and ordered to the *Wolverine*.

Richards, T. W., surgeon, detached from the *Arkansas*, and ordered to the Naval Recruiting Station, Baltimore.

Wright, B. L., P. A. surgeon, ordered to the *Arkansas*.

McClanahan, R. K., asst.-surgeon, detached from the Naval Recruiting Station, Baltimore, September 5, and ordered to Washington, D. C., September 6, for examination for promotion, and then to wait orders.

Lando, M. E., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Naval Medical School, Washington, D. C.

DeValin, H., acting asst.-surgeon, detached from the *Wolverine* and ordered home to wait orders.

DeLancy, C. H., P. A. surgeon, ordered to the *Paducah*.

Butler, C. St. J., P. A. surgeon, detached from the *Castine* when placed out of commission and ordered to the Naval Hospital, San Juan, P. R.

Page, J. E., P. A. surgeon, detached from the *Lancaster* and ordered home to wait orders.

Bachmann, R. A. Y., P. A. surgeon, ordered to the *Lancaster*.

Baker, M. W., asst.-surgeon, detached from the Naval Station, San Juan, P. R., and ordered home to wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the fourteen days ending September 6:

Sawtelle, H. W., surgeon, to proceed to Richmond, Va., for special temporary duty.

Magruder, G. M., surgeon, granted leave of absence for one month, from August 26, on account of sickness.

Gardner, C. H., P. A. surgeon, to proceed to New Orleans, La., and report to Surgeon J. H. White for special temporary duty.

Foster, M. H., P. A. surgeon, to proceed to Galveston, Tex., and assume temporary command of the service.

Stiles, Ch. W., chief Division of Zoology, granted leave of absence for 12 days from August 14.

Hunt, Reid, chief Division of Pharmacology, granted leave of absence for 10 days from August 21.

Hunt, Reid, chief Division of Pharmacology, to represent service at meeting of American Pharmaceutical Association at Atlantic City, N. J., September 4 to 9.

Richard, N. D., acting assistant-surgeon, granted leave of absence for 7 days from August 17, under the provisions of paragraph 210 of the regulations.

Stevenson, J. W., acting asst.-surgeon, to report at Washington, D. C., for special temporary duty.

Thompson, C. V., acting asst.-surgeon, granted leave of absence for 16 days from September 2.

Richardson, S. W., Pharmacist, to report at Washington, D. C., for special temporary duty.

McKay, M., pharmacist, relieved from duty at Boston, Mass., and directed to proceed to Cincinnati, Ohio, and report to acting assistant surgeon in charge for duty and assignment to quarters.

Woods, C. H., Pharmacist, on being relieved from duty at Cincinnati, Ohio, to proceed to Evansville, Ind., and report to medical officer in command for duty and assignment to quarters, relieving Pharmacist G. I. Van Ness, Jr.

Carlton, C. G., pharmacist, granted leave of absence for 7 days, from August 22, under the provision of paragraph 210 of the regulations.

Van Ness, G. I., Jr., pharmacist, on being relieved from duty at Evansville, Ind., by Pharmacist C. H. Woods, to report at Washington, D. C., for duty.

Vaughan, G. T., asst. surgeon-general, and Austin, H. W., surgeon, detailed to represent service at meeting of the Association of military Surgeons at Detroit, September 26-29.

Gassaway, James, surgeon, to proceed to Guthrie, Okla., for special temporary duty.

Irwin, Fairfax, surgeon, to report at Bureau, Washington, D. C., for special temporary duty.

Irwin, Fairfax, surgeon, to proceed to New York for special temporary duty, on completion of which to rejoin station at Philadelphia, Pa.

Banks, C. E., surgeon, to proceed to Jacksonville, Fla., for special temporary duty.

Williams, L. L., surgeon, to inspect the quarantine station at the Port of Baltimore, Md.

Woodward, R. M., surgeon, detailed to represent service at the meeting of the American Public Health Association at Boston, September 25-29, 1905.

Stoner, J. B., surgeon, granted two days' leave of absence from August 27.

Lavinder, P. A. surgeon, relieved from duty at New Orleans and directed to proceed to Natchez for special temporary duty, relieving P. A. Surgeon Goldberger.

Goldberger, Joseph, P. A. surgeon, to proceed to Memphis, Tenn., for special temporary duty.

Goldberger, Joseph, P. A. surgeon, to proceed to Bainbridge, Ga., for special temporary duty.

Trotter, F. E., P. A. surgeon, to proceed to Victoria, B. C., for special temporary duty.

McLaughlin, A. J., P. A. surgeon, relieved from duty in office of American Consul at Naples, Italy, and assigned in office of American Consulate at Hamburg, Germany.

Foster, A. D., asst.-surgeon, to proceed from Naples, Italy, to Trieste for special temporary duty.

Ashford, F. A., asst.-surgeon, relieved from duty at Ellis Island and directed to proceed to New Orleans, La., and to report to Surgeon J. H. White for special temporary duty.

Roehrig, A. M., pharmacist, to represent the service at meeting of the American Pharmaceutical Association at Atlantic City, N. J., September 4-9.

Richardson, S. W., pharmacist, to proceed to New Orleans and report to Surgeon J. H. White for special temporary duty.

APPOINTMENTS.

Dr. Marshall C. Guthrie of North Carolina, commissioned as assistant surgeon, Public Health and Marine-Hospital Service.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the period from August 19 to September 8:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, August 19-26, 1 case.

Michigan: Grand Rapids, August 19-26, 2 cases.

Ohio: Toledo, August 12-19, 1 case.
Tennessee: Memphis, August 19-26, 2 cases.
Wisconsin: Appleton, August 19-26, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, July 1-8, 1 case.

SMALLPOX—FOREIGN.

Brazil: Bahia, July 29-August 5, 1 death; Rio de Janeiro, July 23-August 6, 18 cases, 5 deaths.
Chile: Valparaiso, to August 9, 3,553 cases, 836 deaths.
China: Niuchwang, July 22, 1 case.
France: Lyon, August 5-12, 1 death; Paris, August 5-19, 76 cases, 11 deaths.
Great Britain: Cardiff, Aug. 12-19, 1 case; Liverpool, 1 case; London, July 29-Aug. 5, 3 cases.
India: Bombay, July 25-August 8, 6 deaths; Calcutta, July 22-29, 3 deaths; Madras, July 22-28, 3 deaths.
Italy: Catania, August 17-24, 1 death.
Russia: Moscow, July 22-August 12, 13 cases, 6 deaths; Odessa, August 5-19, 11 cases, 3 deaths; St. Petersburg, July 29-August 5, 3 cases 1 death.
Spain: Barcelona, August 10-20, 1 death.

YELLOW FEVER—UNITED STATES.

Florida: Pensacola, August 29, 3 cases.
Georgia: Atlanta, September 2, 1 case, imported.
Indian Territory: Mayville, September 1, 1 case, doubtful.
Louisiana: Acadia Parish, to August 17, 1 case; Ascension Parish, August 14-September 3, 21 cases; Assumption Parish, August 26-September 3, 6 cases; East Carroll Parish, August 14-September 4, 36 cases, 1 death; Iberville Parish, to August 31, 15 cases, 5 deaths; Jefferson Parish, to September 3, 149 cases, 14 deaths; Lafayette Parish, August 15-September 4, 2 cases; Lafourche Parish, to September 3, 331 cases, 31 deaths; Madison Parish, August 14-September 4, 9 cases; Orleans Parish, July 21-September 4, 2,075 cases, 292 deaths; Plaquemines Parish, to September 3, 23 cases, 2 deaths; Rapides Parish, August 15-September 3, 7 cases; St. Bernard Parish, to Sept. 3, 7 cases, 1 death; St. Charles Parish, 73 cases, 6 deaths; St. James Parish, 4 cases; St. John the Baptist Parish, 55 cases, 7 deaths; St. Mary Parish, 342 cases, 9 deaths; St. Tammany Parish, to August 22, 2 cases; Terrebonne Parish, to September 3, 66 cases, 3 deaths.
Mississippi: Gulf Quarantine, July 22-August 19, 53 cases, 1 death, on vessel; Hattiesburg, August 28, 1 case, diagnosis proved not yellow fever; Lumberton, July 28, 1 case; Mississippi City, August 22-September 4, 31 cases; Natchez, to August 30, 15 cases; North Gulfport, August 15-September 4, 32 cases; Pearlington, September 1, 2 cases; Vicksburg, August 30, 2 cases.
New York: New York Quarantine, August 1-12, 1 death, from S. S. *Advance*, from Colon.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 22-August 5, 16 cases, 6 deaths.
Mexico: Tezonapa, Aug. 20-26, 3 cases; Tierra Blanca, August 13-26, 1 case, 2 deaths; Vera Cruz, 5 cases.
Nicaragua: Leon, August 8, present; Managua, present.
Peru: Lima, August 12, 1 case, imported.
Panama: Bocas del Toro: August 11-18, 1 case; Colon, July 31-August 12, 6 cases, 2 deaths; Panama, 8 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, August 26, present.

CHOLERA—FOREIGN.

Germany: Hamburg, August 29-September 5, 2 cases, 1 death, first case imported.
India: Bombay, July 25-August 8, 2 deaths; Calcutta, July 22-29, 26 deaths; Madras, July 22-28, 145 deaths.

PLAGUE—INSULAR.

Hawaii: Waipahu, August 30, 1 death.
Philippine Islands: Manila, July 1-8, 3 cases, 2 deaths.

PLAGUE—FOREIGN.

Argentina: Santiago del Estero, July 20, recrudescence.
Australia: Queensland: Cairns, July 8, 1 case; Ipswich, July 5, 1 case, 1 death; New South Wales: Sydney, July 1-8, 1 case.
Brazil: Rio de Janeiro, July 22-August 5, 4 cases, 2 deaths.
China: Mukden district, July 22, reported.
Egypt: General, July 8-15, 11 cases, 10 deaths.
India: General, June 24-July 8, 4,338 cases, 3,943 deaths; Bombay, July 25-August 8, 102 deaths; Calcutta, July 22-29, 8 deaths; Madras, July 22-28, 1 death.
Japan: Chiba Ken, July 20, 1 death.
Panama: La Boca, August 26, 1 death.
Peru: Lima, July 10-20, 2 cases, 2 deaths.
Siam: Bankok, July 1, present.
Turkey: Beirut, July 17, 1 case, imported.

Coming Society Meetings

American Electro-Therapeutic Association, New York City, September 19-21.
American Association of Obstetricians and Gynecologists, New York City, September 19-25.
American Public Health Association, Boston, September 25-29.
Medical Society of the State of Pennsylvania, Scranton, September 26-28.
Association of Military Surgeons of the United States, Detroit, September 26-28.
Wyoming State Medical Society, Cheyenne, September 27-28.
American Roentgen Ray Society, Baltimore, September 28-30.
Mississippi Valley Medical Association, Indianapolis, October 10-12.
New York State Medical Association, New York City, October 16-19.
American Academy of Medicine, Chicago, November 7-8.
American Dermatologic Association, New York City, December 28-30.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Chronic Nephritis.

Damage done to a kidney can not be repaired is the basis on which Dr. A. C. Morgan, in *Med.-Chir. Jour.*, places his treatment toward prohibiting any advance of pathologic process. The complications which may arise in the course of a chronic interstitial nephritis are the chief causes of death, such as pneumonia, la grippe, cerebral hemorrhage, cardiac dilatation, pericarditis and inflammation of other serous membranes.

Uremia arising in the course of nephritis is a sign of broken compensation of the kidney similar to an incompetent heart. So in the administration of diuretics the same rule should hold good as in the treatment of heart lesions, and these remedies should never be used until actually needed.

Hygienic measures should be enforced in the treatment of chronic nephritis. Flannels should be worn the year round in order to keep the skin active and steady and to protect the patient from sudden changes of weather. If possible, a warm equable climate should be sought in the winter time. Social life should be abandoned and irregular hours of sleep avoided. Cold baths should be prohibited in order to avoid throwing too much work on the kidneys. Hot baths are of value in order to promote skin elimination and thus to relieve the kidneys. Baths may be given in the form of warm packs, Turkish baths, vapor or hot-water baths. Massage is of value when the patient is confined to bed for any reason. Rest in bed is recommended when the albumin is severe or persistent, or when the heart shows signs of weakness, and the patient should be required to remain in bed for ten hours out of the twenty-four to relieve the heart's action and to diminish the general activity. A large amount of water is required to replace the excessive excretion of water and to keep the solids in solution, avoiding, however, excess in this treatment, as the tension may be increased by the ingestion of too much water. Three quarts of water a day is said to be a proper amount. The carbonated waters are recommended to counteract the high acidity of the urine which is usually present. According to Millard, malt liquors are bad, spirits are worse and acid wines are the least harmful.

DIET.

As to diet, the nitrogenous foods must be decreased considerably, as they increase the secretion of urea. However, the diet must not be too much restricted, as the patient's strength must always be maintained. Coffee and tea must be used sparingly and milk used to a marked extent. Meat and gravies must be restricted; oysters may be eaten freely.

SYSTEMIC TREATMENT.

The object to be kept in mind is to inhibit or to arrest the sclerotic and degenerative changes and to overcome the anemia. Potassium iodid, hydriodic acid and mercuric chlorid are the preparations to be used in combating the first conditions, and arsenic and iron to correct the anemia. Iron is an astringent and a tonic, but must not be used, according to this writer, in too large doses, as excessive doses disturb the secretions and lead up to dangers of uremia.

If the conditions are such as to require a decrease in the arterial tension, such as flushing of the face, congestive headaches, vertigo and epistaxis, and if the heart is in good condition, veratrum viride or aconite is recommended over long periods, and glonoin is of service if the heart is weak. A low tensional pulse predisposes to serous effusions and a decrease in the daily elimination from the kidney, thus increasing the dangers of uremia, and this must be overcome. In such conditions digitalis combined with nitroglycerin is recommended.

Whether the fluid in the cavities be an exudate or a transudate it should be disposed of as rapidly as possible. If a transudate is present, increase the tension; if an exudate, absorptives or local applications are of service. If necessary the cavity may be tapped and an adrenalin solution injected which, the author states, prevents further accumulation of the fluid.

Saline cathartics are valuable in getting rid of fluid by absorption.

Counterirritation is of service in the parenchymatous form in which a marked congestion of the kidney is present. Dry or wet cupping over the kidney often relieves the congestion and improves diuresis.

Drowsiness is to be overcome by decreasing and restricting the solid diet, by increasing the fluids and elimination by means of purging, of sweating rather than by diuretics, which may be required later in the course of the disease.

Slight edema may be overcome by bandaging the limbs, rest in bed late in the morning, or rest in the middle of the day. If the edema still progresses other eliminants and diuretics must be employed, and if the limbs become large and the skin tense the skin may be punctured in many places and thus the fluid allowed to escape; in some cases the Southey tubes may be inserted. Erysipelas may be avoided in such procedures by careful attention to asepsis in the dressings.

Persistent vomiting or diarrhea are symptoms of toxemia. The former is relieved by washing out the stomach and the latter by diaphoresis and diuresis, but it should not be checked entirely, as it may bring on uremia.

Pruritus is due ordinarily to urea crystals irritating the skin. Hot baths followed by a 4 per cent. carbolic acid solution applied localy, or the infusion of conium leaves or chloral internally relieve the condition.

UREMIA.

When uremia develops, showing the failure in compensation of the kidney, venesection is indicated to rapidly eliminate the toxins, followed by an injection of the normal salt solution. When convulsions occur such preparations as caffein, scoparius, digitalis and convallaria are useful. If the heart is well compensated and does not enter into the cause of dropsy, the potassium salts, scilla and sweet spirits of niter are recommended to aid the function of the kidney. Asthma is frequently a symptom denoting the presence of a toxemia and disappears with the improvement, by eliminants, of the heart and kidney. Sometimes it is necessary to resort to chloral or morphin hypodermically in small doses, or perhaps to venesection.

Epistaxis sometimes occurs and indicates the necessity of lowering blood pressure.

Diaphoretics are indicated very early in the treatment as promoters of elimination and thus relieving the work of the kidney. They should be employed regularly, depending chiefly on hot water or hot-air baths. As to the medicinal agents as diaphoretics, sweet spirit of niter and liquor ammonia acetatis are preferable, using pilocarpin in emergency cases. Diuretics are of value only when the compensation of the kidney has failed and the urine is scanty and dropsy present. When indicated by poor heart's action and also to assist the kidney, the author recommends a hypodermic injection of morphin, followed the next morning by a hypodermic injection of pilocarpin. The author states that he has never seen any ill-effects follow the use of morphin when given in this way. The operation for stripping off the capsule of the kidney was not discussed by this writer.

Acute Nephritis.

Yeo recommends the following combinations in the treatment of acute Bright's disease:

℞. Infusi jaborandi (1-45) ..... ℥vi 180
Syrupi aurantii ..... ℥v 20
M. Sig.: One tablespoonful every hour or two.

To relieve the anasarca in acute Bright's disease after the early acute symptoms have subsided, the following is recommended:

℞. Tinct. ferri chloridi ..... ℥vi 24
Liq. ammon. acetatis ..... ℥iii 90
Aquæ chloroformi ..... ℥vi 180
M. Sig.: One tablespoonful in a wineglassful of water every four hours.

As a diuretic in acute Bright's disease he recommends the following:

℞. Potass. citratis ..... ℥ss 15
Infusi digitalis ..... ℥ii 60
M. Ft. mistura. Sig.: Two teaspoonfuls in aërated water every three hours.

In the chronic form the following combination is recommended as a diuretic:

℞. Tinct. digitalis ..... ℥ss 15
Vini scillæ ..... ℥iss 45
Spts. etheris nitrosi ..... ℥ii 60
M. Sig.: One teaspoonful in water every three or four hours.

For the general elimination the following is of value:

℞. Potassii iodidi ..... gr. xv 1
Sodii phosphatis ..... gr. xxx 2
Sodii chloridi ..... gr. lxxv 5
Aquæ q. s. ad ..... ℥xx 600
M. Sig.: The entire amount to be taken in divided doses in the twenty-four hours.

As a tonic and diuretic the following is advised:

℞. Tinct. ferri chloridi ..... ℥ss 15
Acidi acetici ..... ℥ss 2
Liq. ammon. acetatis ..... ℥v 150
Aquæ ..... ℥ii 60
M. Sig.: One teaspoonful in water three times a day. Or:

℞. Ferri sulph.
Sodii bicarb, āā ..... gr. lxxv 5
Ext. taraxici ..... ℥i 4
M. Ft. pil. No. lx. Sig.: Take three pills night and morning.

As a hydrogogue cathartic the following is of value:

℞. Potassii tartarati ..... ℥i-iss 4-6
Pulv. jalapæ ..... gr. viii 5
Pulv. cambogiæ ..... gr. i 06
M. Ft. chartula No. i. Sig.: To be taken at night and a similar dose the following morning.

To relieve the anasarca the following combination is also recommended by some authorities:

℞. Potassii acetatis ..... ℥iiss 10
Infusi digitalis
Infusi juniperi, āā ..... ℥iii 90
M. Sig.: One tablespoonful every two to four hours.

Elaterin is a very efficient preparation to relieve the edema of the lower extremities and the abdominal ascites. It may be given in doses ranging from gr. 1/40 (.001) to gr. 1/20 (.003) and the dose repeated every two hours until a watery evacuation is produced.

Medicolegal

Rights Under Later, of Practitioner Under Former, Law.

The Supreme Court of Idaho holds (State vs. Cooper, 81 Pacific Reporter, 374), that under the provisions of section 5 of what is known as the "Medical Law of 1899," the Board of Medical Examiners are not empowered to call on applicants for a license for their diplomas, who were engaged in the practice of their profession under the law of 1887. Where it is shown that an applicant for a license to practice medicine and surgery was a resident of the state, engaged in the practice of his profession under the provisions of the law of 1887, and had complied with all the provisions of the law of 1899, the court holds that, in case the Board of Medical Examiners refused to issue his license, it was not criminal in him to pursue his profession. It was urged in this case by counsel for the state that the applicant should have resorted to his civil remedy by an appeal from the action of the Board of Medical Examiners to the district court, and there had the action of the board reviewed. It appeared that the board called on him for his medical diploma, which he sent to the board, who thereafter informed him that they did not and would not recognize the institution giving it as one having

authority to issue a diploma to a doctor of medicine. The court says that when he received this notice he had the right to appeal from the action of the board, or he could treat their action as an infringement on his rights under the laws of 1887 and 1899. The statute of 1899 did not authorize the board to demand of him his diploma. He had furnished them all that they were entitled to under the law. They could not ignore the plain provisions of the 1899 law, and thereby make a criminal of a citizen of the state engaged in a legal and lawful business. If the Board of Medical Examiners could withhold a license from an applicant in this manner until he could appeal to the courts for redress, making a criminal of him every time he prescribed for or visited a patient, they could not only deprive him of valuable property rights, but ruin him in his profession, and brand him as a criminal. This is neither the spirit nor intent of the law.

Insanity and Expert Evidence.

The Supreme Judicial Court of Massachusetts says, in the homicide case of Commonwealth vs. Johnson, where the only defense offered was the insanity of the defendant at the time of the homicide, that on this issue it was competent for him to show that his ancestors or relatives had been insane, but the order in which the evidence should be introduced was wholly within the discretion of the trial court. A refusal to permit the cross-examination of the government experts on the relative value and reputation of medical authorities who had written on the general subject of insanity, as well as the exclusion of certain hypothetical questions addressed to them, were also discretionary. Nor is error found in the government having been allowed to question each of these experts as to whether he had formed any opinion, from his examinations and investigations and what he had heard in court, as to the mental condition of the defendant on date named, the physical and mental history of his family and himself, on which the questions were founded, having come solely from the defendant's statements, letters, and admissions or from his witnesses, and having been accepted as true, while it further appeared that each of the experts also had seen and examined him. Then, this question having been answered in the affirmative, and an opinion given that he was sane, followed by a similar reply to the further question, "What is your opinion of his sanity now?" the court says that if a question of this character, resting on the assumption of the truth of the evidence of a plaintiff alone, is admissible, which has been held, there is in principle no substantial reason why a medical expert, who has not made an examination of the patient whose physical or mental condition he is called on to determine, but has heard it described by witnesses at the trial, should not answer similar questions without their being hypothetically framed. By this form of examination no injustice is done, for whatever reasons, even to the smallest details, that an expert may have for his opinion, can be fully brought out by cross-examination. But here, as in other matters relating to the general management of trials, much must be left to the judgment of the trial court, which will not be revised unless the course pursued plainly was prejudicial to the legal rights of the defendant. Thus the length of hypothetical questions, or whether the facts assumed are within the hypothesis on which it is claimed the case rests, or whether a witness is professionally qualified, or is sufficiently acquainted with the history of the case to give an opinion, are as well within the reasonable exercise of this power as the order of presentation of evidence, etc. It further must be held that, as each of these experts also testified from personal observation of the defendant, a direct question calling for their opinion formed on such an examination would have been competent. As the case stood, their opinions rested on the assumption of the truth of the uncontradicted testimony, so far as material, which each had heard, considered in the light of the knowledge of his intellectual condition previously obtained from actual contact. The number of witnesses does not alter the practical operation of the rule, if there was no conflict of evidence, or the facts so complicated that there may be danger of the jury being confused and misled. But if the evidence is of a complicated and contradictory character, and such that it would be likely to be understood differently by intelligent jurors, the question should call for the facts on which the opinion is founded. Evidence descriptive of the attitude and appearance of the defendant when under scrutiny by one of the experts was entirely competent, either as being in the nature of a conversation with him, or as furnishing a reason for the opinion of the witness. But an exception taken to the omission of any instruction that experts, when testifying as witnesses, must state the grounds or reasons for their opinions, was untenable. If the defendant desired their reasons, his counsel were not precluded from asking for them on cross-examination. There is no general rule of practice which makes it imperative on the party calling such a witness, that, after he has been duly qualified and given an opinion, his reasons therefor also must be stated, though it is frequently done.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.
September 2.

1 *Cryoscopy. T. Tieken, Chicago.
2 *Study of the Gastric Contents in Urticaria. L. K. Hirshberg, Baltimore.
3 Bacterial Flora of the Intestinal Mucosa and Conjunctiva of the Normal Chicken. W. E. King, Ithaca, N. Y.
4 *Arteriosclerosis Affecting the Nervous System. B. C. Loveland, Syracuse, N. Y.
5 *Etiology and Diagnosis of Early Tubal Pregnancy. W. E. Ground, Superior, Wis.
6 *Some Gynecologic Superstitions. L. Waite, Chicago.

1. **Cryoscopy.**—Tieken reviews the literature on the subject, and gives a résumé of the work done and conclusions drawn by various writers.

2. **Gastric Contents in Urticaria.**—In eight cases of urticaria, Hirschberg noted the frequent coincidence of hyperacidity in this condition. Five of his eight cases showed a high total acidity, with much free hydrochloric acid.

4. **Arteriosclerosis Affecting the Nervous System.**—Loveland says that arteriosclerosis affecting the nervous system naturally would be divided into three or possibly four classes: cerebral, spinal, peripheral and possibly sympathetic. Cerebral arteriosclerosis may be divided into a major and a minor type. The major type passes rapidly to apoplexy and paralysis or death, and has few symptoms early in its course. The minor type comprises a complex of symptoms which are the direct expression of the vascular change, exclusive of such accidents as hemorrhage and its consequences. The symptoms include fatigue or exhaustion of the brain; the inability to take up new work, while familiar work can still be done; headache, usually frontal and persistent, increased by stooping and abdominal pressure; slight vertigo and loss of memory—in fact, the symptom-complex so frequently associated with neurasthenia. Arteriosclerosis of the spinal cord has the same major and minor types, the former marked by small hemorrhages, paralysis and rapid degeneration and myelitis; the latter by the slower degenerations of the cord such as the locomotor ataxia following syphilis. The effect of arteriosclerosis on the peripheral nerves is well illustrated by intermittent claudication, Reynaud's disease, acroparesthesia and quite a variety of sensory disturbances in the extremities such as persistent coldness, formication, itching or burning sensations, and possibly the neuritis so frequent in gouty diabetes. The effects on the sympathetic nerves are not so easily recognized, but when the arterial trouble can be determined elsewhere such symptoms as cardiac irregularity, some vague nervous sensations associated with digestion, persistent flushing of the skin sometimes associated with albuminuria, may be attributed to this cause. The treatment is the same so far as medicine and diet are concerned as in general arteriosclerosis; the two points which make for the best success are early diagnosis and persistent, continued care.

5. **Etiology and Diagnosis of Early Tubal Pregnancy.**—Ground has operated in 28 cases of tubal pregnancy. Of these, 21 patients were operated on after rupture and 7 before rupture had occurred. In all prerupture cases abdominal sections were performed. Of the complicated cases 16 were suprapubic

and 5 vaginal. All the patients recovered. All had demonstrable lesions sufficient to account for the arrest of the fecundated ovum in the tube. The results of gonorrheal infection and minor postpuerperal lesions were most frequently noted as etiologic factors.

6. **Some Gynecologic Superstitions.**—Waite states that gynecology has been encumbered with numerous dogmatic theories which have been stated and restated so many times that they have been finally accepted by the profession without question and have become veritable superstitions. She takes up the questions especially of backache and constipation as symptoms supposed to be caused by retrodisplacements of the uterus and shows by statistics that both of these conditions are present in a large percentage of antipositions and absent in a fair percentage of retropositions. In 1,000 cases taken from her clinic at the Mary Thompson Hospital 44 per cent. of the patients with antiposition gave a history of backache and 41 per cent. of the patients with retrodeviation stated definitely that they did not suffer with backache. In 500 cases 52 per cent. of the patients with antiposition gave a history of constipation, and of the cases of retroposition 34 per cent. of the patients reported normal bowel movements. The question of childbearing as a remedy in dysmenorrhea is also discussed. Of 300 patients the question, "Have you more or less pain since the birth of your children?" 45 per cent. reported more pain, 30 per cent. less and 25 per cent. no difference. Waite believes that the practical application of the statistics relating to the clinical significance of retroposition of the uterus bears directly on the enormous amount of unnecessary operating which is being done under the false impression that the symptoms of which the patient complains are due to the position of the uterus and the complications which are in reality responsible for the symptoms are overlooked.

Medical News, New York.

September 2.

7 Prognosis in Syphilis. R. W. Taylor, New York.
8 Prognosis of Syphilis: Relations to Marriage and Heredity. P. A. Morrow, New York.
9 Dermoid Cysts of the Mediastinum. (Continued.) R. S. Morris, Ann Arbor, Mich.
10 *Social Status of Tuberculous Persons. W. W. Pennell, Mt. Vernon, Ohio.
11 *Medical Treatment of Nephritis. A. R. Elliott, Chicago.
12 *Care of the Perineum, with Description of a New Method of Delivery of the Shoulder. H. K. Kerr, Hammond, N. Y.

10. **Social Status of Tuberculous Persons.**—Pennell directs attention to the danger of infection from a tuberculous person, the many sources of infection and what should be done in the matter. He says that the public should understand that tuberculosis is infectious to susceptible people; that it requires intimate and continued contact for others, but that daily contact with many different tuberculous persons may act as continued contact with one person; that houses in which tuberculous persons have lived or died are infected houses, therefore unfit to live in until thoroughly fumigated and cleansed. When persons are suspected of having tuberculosis and refuse to employ a physician, a health board should send a competent medical man to examine such invalids. On the filing of such examiner's report, if the persons prove to be tuberculous, the movements of the affected individuals should comply with the regulations made for the restriction of those maladies which are dangerous to others. Pennell urges a just, humane and adequate segregation of all cases of pulmonary tuberculosis.

11. **Medical Treatment of Nephritis.**—Elliott states that recent contributors to the therapy of Bright's disease, including von Noorden and his school, confine their attention too strictly to the kidneys, whereas the disease is a widespread nutritive disturbance involving the organism as a whole with the nephritis as but one manifestation. He urges the necessity of careful examination of the patient in all respects, and the correction of any other functional perversion which may be found to exist in order to eliminate sources of systemic toxemia. Individualism in the management of this disease is absolutely necessary. The medical treatment is discussed under the headings of: 1, Nephritis without dropsy; 2, nephritis with dropsy; 3, uremia. Cases of nephritis without dropsy are chiefly examples of chronic interstitial nephritis during the stage of cardiovascular compensation. The main indications in the management of this type of chronic nephritis are protection of the kidneys from irritation, especially the strain imposed by intercurrent acute toxemias, and secondly, the maintenance of cardiovascular compensation. The first of these two indications is fulfilled by regulation of the patients' diet and personal hygiene. The amount of water to be drunk and the hygiene of the bowels are of particular importance. The management of cardiovascular compensation becomes essential in the regulation of high blood pressure. Elliott warns against unwarrantable interference with medicinal measures. Diet, hygiene and free elimination of the bowels accomplish the purpose best. If these fail, and the patient suffers from excessive pulse tension, vasodilator drugs may be administered. The action of the various nitrites, aconite and iodids for the reduction of blood pressure is discussed. In nephritis without edema, digitalis and other cardiac stimulants are to be withheld and diuretics are not only unnecessary but harmful. When dropsy is renal in origin, diuretics have next to no influence. Prolonged rest in the recumbent position, restriction of fluid intake, hypochlorization, diaphoresis, colonic irrigation, subcutaneous puncture and paracentesis are to be employed. If the dropsy is of cardiac origin, cardiac tonics, rest and restriction of fluids are the measures indicated. The value of iron in Bright's disease is also discussed. In the prophylaxis of uremia the author lays great stress on the employment of purgatives and enteroclysis with alkaline solutions. The value of blood pressure observations in anticipating the advent of uremia is dwelt on, and the action of venesection and lumbar puncture in relieving the high tension of uremia is described. Elliott deprecates the attitude of pessimism toward the prognosis of Bright's disease which is held by so many of the profession. He calls attention to Nature's wonderful powers of adjustment in damaged organic states, nowhere so marvelously displayed as in organic kidney disease, showing that assistance only is needed, seldom interference. The two most important indications in the treatment of chronic nephritis are to protect the patient from intercurrent acute toxemias and to maintain the compensatory adjustment in the circulation.

12. **New Method of Delivery of Shoulder.**—With the patient on her left side, the head being delivered and rotation affected, Kerr places his left hand on the right side of the child's head and presses back firmly. This stretches the perineum from its circumference, laterally and posteriorly, toward the center and anteriorly. Muscular contraction is thereby almost entirely overcome. The perineum is temporarily paralyzed and is elastic like rubber and can hardly be made to tear. By carrying the left shoulder back into the perineum the right shoulder is lowered into the pubic arch. When a pain occurs the left shoulder can not descend, because it is held well back and high up in the perineum. The right shoulder, on the other hand, descends, and as it does so it describes part of a circle around the left shoulder held as a fixed point high up in the perineum, so that the course of the right shoulder is downward and slightly backward, bringing the prominence of the shoulder well back into the vulvovaginal outlet and the right arm below the shoulder into the pubic arch. One pain is usually enough to bring down the right shoulder and cause it to bulge well out of the vulva. This accomplished, the fingers of the left hand, with which backward pressure is being made, low down on the back of the neck or upper end of the spine, are closed and the physician presses up. This increases the space between the back of the child and the maternal soft parts on the left side below and also opens the right axilla. Through this opening in the axilla the forefinger of the right hand is passed and hooked around the arm, close to the shoulder, bringing it down behind the child's back out of the vulva and sweeping it over the pubic arch. Then, before relaxing the grip with the left hand, the right hand is placed on the left side of the child's head and, with the left supporting the perineum, by a downward, forward and slightly upward movement, delivery is effected. Thus, before there is the slightest strain on the anterior part of the perineum, the long diameter—from the tip of one shoulder to the tip of the other (bisacromial)—is exchanged for the shorter diameter—from the axilla to the tip of the opposite shoulder (axilla-acromial) as a presenting part, the

difference again between laceration and practically no danger of laceration. This procedure is mainly applicable to uncomplicated cases, which are in the great majority. It can be employed in most forceps cases by removing the instruments.

Medical Record, New York.

September 2.

13 *Two Cases of Functional Strabismus. D. B. St. J. Roosa, New York.
14 *Food Factor in Uricemia. F. Hare, London.
15 *Tuberculosis Clinic at Gouverneur Hospital. S. S. Bradford and N. G. Seymour, New York.
16 *Cystoscopy and Ureteral Catheterization in Gynecology. H. D. Furniss, New York.
17 *Abuse of Bromids in Epilepsy. W. P. Spratling, Sonyea, N. Y.
18 *Convenient Points for Intramuscular Injections in the Treatment of Syphilis. V. C. Pedersen, New York.
19 Case of Acute Hemorrhagic Pancreatitis. C. M. Tinney, Charleston, Wash.
20 *Hospital Building in the Philippine Provinces. D. G. McCaskey, Buena Vista, P. I.

13. **Functional Strabismus.**—Roosa's first case did not yield to the treatment usually employed, but finally, after two and a half years, after all treatment except the use of the stereoscope and correcting glasses had been dropped, the intermittent strabismus ceased and has not returned. The other patient was cured by the use of glasses and exercises which involved exclusion of the good eye at intervals, and the use of the stereoscope. Now, at the end of eight years, the strabismus has disappeared, though correcting glasses are still worn.

14. **Food Factor in Uricemia.**—Hare analyzes the conditions, such as diet, exercise, pyrexia, neuroses, etc., which induce "pyremia" or uremic variations. He says that there seems to be little doubt that uric acid excretion depends directly on the introduction of uric-acid forming material, and inversely of the degree of pyremia. There will thus be at least a double column of variations in the excretion of uric acid. But since on a mixed diet, the introduction of uric acid material is for the most part approximately concurrent with the increase of "pyremia" due to meals, it follows that the resulting opposite variations in uric acid excretion will overlap and tend to obscure each other. The argument for the twofold causation of uricemia and uric acid excretion, seems, in his opinion, appropriately clinched by the following two pertinent observations: 1. The delayed excretion of uric acid which in the gouty follows the ingestion of uric-acid forming material. 2. The uniformity of uric acid excretion during starvation.

15. **Tuberculosis Clinic at Gouverneur Hospital.**—Bradford and Seymour state that 338 patients have applied for treatment at the hospital from October, 1903, to June, 1905. Two hundred of these were men, and almost one-half of the total number were Russians. Of the 338 cases 85 patients are still under observation, 120 have disappeared, 52 have gone to hospitals, to the country, or to their homes in Europe, 14 have been referred to other clinics as non-tuberculous, and 9 have died. Fifty-one patients have been discharged for insubordination. Seven patients have been discharged as "apparently cured," though they are requested still to report occasionally for observation. Such cases are those in which all constitutional symptoms and expectoration with bacilli have been absent for a period of three months, and the physical signs are those of a healed lesion. The authors believe that the clinic has accomplished four definite and excellent results: 1. It has withdrawn the tuberculous patients into a class by themselves, thus relieving the overcrowded medical clinic and providing some protection to non-tuberculous patients. 2. It has provided a place for the systematic treatment of ambulant cases of the disease in a district of the city thickly populated and extensively exposed to the contagion. 3. It reaches patients heretofore untreated, or treated irregularly and unsystematically. 4. The patients so treated have become a source of education in their homes rather than a menace to their associates.

16. **Cystoscopy and Urethral Catheterization in Gynecology.**—Furniss discusses the technic of cystoscopy, meatoscopy of the ureteral orifices, and ureteral catheterization. He gives the preference to an instrument of the water dilating variety, direct view with catheterizing attachment, as with this all of the bladder can be examined except the anterior wall, which is seldom affected, and catheterization of the ureters with a direct view instrument is far easier than with one of the prism type. The subject of ureteral meatoscopy is given much importance, and the use of the ureteral catheter in hysterectomies, stricture of the ureter, etc., is described. Furniss recommends lavage of the renal pelvis for pyelitis, but believes that the cases of Bright's disease reported benefited by this means were really ones of pyelitis with a few casts in the urine, rather than cases of true nephritis.

17. **Abuse of Bromids in Epilepsy.**—Spratling says that bromids have a limited range of usefulness in their power of suppressing epileptic convulsions, but he has never given the bromid of potassium to an epileptic, and says that the cases must be carefully selected for the use of the other salts. At the Craig Colony the average dose of the drug is 15 grains a day, 5 grains at a time. Spratling personally analyzed twenty-seven patent nostrums for epilepsy and found that the basis of all, without exception, was bromid of potassium. If recoveries occur under the use of the drug, it is in spite of it and not on account of it. When used the bromids must be prescribed with the greatest caution, and it is rarely necessary to push them to the point of producing acne. Their disadvantages are many, and it is preferable to use other harmless depressants in their stead, and to treat the individual instead of one of the symptoms of his disease.

18. **Intramuscular Injections in Syphilis.**—Pedersen describes and illustrates a plan of subdividing the two gluteal regions into four quadrants and making three injections in each of these in rotation in such a manner that the same spot is made the site of operation only once in thirteen weeks. He also describes the technic of injection.

20. **Hospital Building in the Philippines.**—McCaskey describes and illustrates the building of a bamboo hospital at Buena Vista.

Boston Medical and Surgical Journal.

August 31.

21 *Stokes-Adams Syndrome. T. J. Foley, Worcester, Mass.
22 *Ulcer and Cancer of the Stomach: Their Relationship. C. Graham, Rochester, Minn.
23 A Study in Abnormal Psychology. G. M. Parker, New York.
24 What the Suburban Surgeon is Doing in the Abdomen and How He Does It. C. E. Durant, Haverhill, Mass.

21. **Stokes-Adams Syndrome.**—Foley reports two cases and gives a short résumé of the literatrue.

22. **Relationship of Ulcer and Cancer of the Stomach.**—Graham says that clinical experience shows that the great majority of ulcers of the stomach are located at the pyloric end. The immediate pylorus comes first, the lesser curvature second. A small percentage is found elsewhere, few at the cardia. The great per cent. of cancers of the stomach is found at the pylorus and lesser curvature (pyloric end), that is, the same locations find the greatest number of each. Quite a per cent. (50 to 60) of patients suffering from carcinoma gives three or more years of a precancerous history. A growing per cent. of cancer cases are found with short histories and ulcer demonstrated as the earlier lesion. A certain per cent., if small, of short ulcer histories leading to acute pyloric obstruction where the ulcer must have been present for quite a period, and latent. Ulcers may be present for an indefinite period and no symptoms follow until obstruction, perforation and hemorrhage appear, if the acidity is low or absent and the ulcer locates itself along the lesser curvature or near the pylorus. Cancers may develop under the same gastric conditions and only manifest themselves when obstruction or systemic poisoning makes itself felt.

New York Medical Journal.

September 2.

25 Resuscitation by Manipulation of the Heart of a Patient Apparently Dead from Shock. W. S. Conkling, Des Moines, Iowa.
26 The Mephisto of the Pale Brotherhood of Disease: Study of Masked Rheumatism, Based Not on Books, But Experience. G. F. Souwers. Philadelphia.
27 Tropical Diseases of the Angola Highlands. F. C. Wellman, Benguella, West Africa. (Continued.)
28 Six Lectures on the Diseases of the Blood. J. M. Swan, Philadelphia. (To be continued).
29 End Results in Surgery of the Kidney, Based on a Study of Ninety Cases, with One Hundred and Twenty-three Operations. A. Vander Veer, Albany. (Concluded.)
30 *Contribution to the Surgery of Perforating Gastric Ulcer. A. B. Mitchell, Belfast, Ireland. (Concluded.)
31 *Some Heart Points for Medical Examiners. R. Ellis, New York.
32 Further Research in Tuberculosis. J. D. Gibson, Denver, Colo.

30. **Gastric Ulcer.**—Mitchell reports 14 patients operated on, with 7 recoveries.

31. **Heart Points for Medical Examiners.**—Ellis calls attention to some errors made by examiners in interpreting heart findings and mentions points of distinction which will serve to guide examiners in estimating a risk correctly.

Lancet-Clinic, Cincinnati.

September 2.

33 Congestive Hyperemia in the Treatment of Acute Suppuration. M. Salzer, Cincinnati.
34 Recent Observations on the Action and Therapeutic Value of Currents of High Frequency and High Potential. C. Pope, Louisville, Ky.
35 Education and the Hygiene of the Nervous System. H. H. Hoppe, Cincinnati. (Continued.)

Physician and Surgeon, Detroit and Ann Arbor.

August.

36 Value of Statistics in the Study of Cancers. T. A. McGraw, Detroit.
37 Historical Sketch of the Nerves of the Female Genitals—The Pelvic Brain. B. Robinson, Chicago.

Ophthalmic Record, Chicago.

August.

38 *Origin of the Pain in Photophobia and the Blepharospastic Syndrome. P. Fridenberg, New York.
39 Zonular Cataract with Irideremia. Extraction of the Lens, which Had Become Entirely Opaque, in the Capsule, with Microscopic Examination. F. N. Lewis and E. S. Thompson, New York.
40 Case of Discoloration of the Cornea by Blood Pigment, and One of Hemorrhage into the Cornea. O. F. Wadsworth, Boston.
41 *New Instrument: To Shorten the Subjective Branch of Refraction and to Make it More Accurate. J. N. Rhoads, Philadelphia.

38. **Origin of Pain in Photophobia.**—Fridenberg distinguishes two classes of photophobia which differ in cause and mechanism, although both may be accompanied by similar external and superficial manifestations. 1. Specific, idiopathic, primary, retinal photophobia, representing a reflex from the optic nerve to the sensory branches of the trigeminus or ciliary nerve, or to the motor nerves of the eye and lids, and due to hyperesthesia of the nerve filaments engaged in light perception, or to excessive stimulation of normal structures. The discomfort in these cases is caused by intense "specific" stimulation of the retina; actual pain by iris cramp. This form is that observed in normal eyes suddenly exposed to glaring light, as in retinal asthenopia, neurasthenia, hysteria and perhaps in snowblindness. 2. Secondary, symptomatic, superficial, corneal photophobia, due to hyperesthesia of the sensory nerve terminals in the skin of the lids, cornea, conjunctiva, and ciliary body, as well is in the mucous membrane of the nose, in the maxillary antrum, teeth, and representing the reflex from the sensory fibers of the trigeminal nerve, and other nerves, to the motor branches of the facial. In this class of photophobia we have to deal with corneal or ciliary pain, absolutely independent of any process in the iris or retina. The most frequent causes of such pain are the irritation of the superficial nerve endings in abrasion or foreign body in the cornea, corneal ulcer, sympathetic iritis, cyclitis, ciliary wounds, and so forth. Of this form, which Fridenberg designates as pseudo-photophobia, or the blepharospastic syndrome, phlyctenular keratitis is a characteristic paradigm, and tonic blepharospasm the clinical expression.

41. **New Lens Holder.**—Rhoads has devised a lens holder which shortens the subjective branch of refraction and makes it more accurate. This instrument is six and one-half inches long, and contains a plus and minus lens of the same relative strength, that is, a plus 0.50 Sp., and a minus 0.50 Sp., or minus and plus quarters. The long straight shank has the minus lens attached to it and the short shank carries the plus lens. The short shank is movable and is held in place by a spring, but when its upper short end is pressed on it rises up parallel and directly over the long shank, and consequently the lenses neutralize each other, thus making a third glass. He also uses a pair of cylinders fastened to the same kind of shanks, which neutralize themselves in the same manner. The axes of the cylinders are placed parallel with and straight out from the shanks. The lens rings are one inch and a quarter in diameter. This instrument is just a little less important than Jackson's cross cylinder. It shortens the time consumed in refraction exceedingly, and renders the result far more accurate. After a patient has been shadow tested it rarely takes over five minutes with each eye to finish the refraction by this method. Owing to the short time it takes with this instrument and system, nervous and even illiterate women answer promptly and correctly, and thus are not tired out and sent home to their beds for a couple of days, as is quite often the result by the generally used method.

Journal of Cutaneous Diseases, New York.

August.

42 Follicles of the Skin and Conjunctiva. H. G. Anthony, Chicago.
43 *Location of Extragenital Chancres. D. W. Montgomery, San Francisco.
44 *Case of Chronic Pyogenic Onychitis Cured by the X-Ray. G. E. Pfahler, Philadelphia.

43. **Location of Extragenital Chancres.**—Of 67 cases of extragenital chancre Montgomery noted the location of the lesion in 58 as follows: Lips, 25; tongue, 3; corner of mouth, 4; abdomen, 5; anus, 3; fingers, 7; forearm, 2; and one each on gums, tonsil, cheek, eye, neck, breast, nates, wrist and back of hand. Twenty of the lip chancres, or nearly 68 per cent., occurred in women. In 17 of these cases the lower lip was the one affected.

44. **X-Ray in Chronic Pyogenic Onychitis.**—The case cited by Pfahler resisted all forms of internal and local treatment and yielded to the *x*-ray in three months. *X*-ray treatment was given three times a week, with the tube six inches distant, a two and one-half inch vacuum and five minutes' exposure, using about 1 mp. through the tube. Improvement was noted after two weeks. Twenty-five treatments in all were given.

Interstate Medical Journal, St. Louis.

August.

45 Differential Diagnosis of Organic Hemiplegia and Hysteric Hemiplegia. J. Babinski, Paris.
46 *Conservation of the Parietal Motor Nerves in Abdominal Section. V. P. Blair, St. Louis.

46. **Conservation of Nerves in Abdominal Section.**—Attention is directed by Blair to the necessity of conserving the motor nerves supplying the abdominal region when incising the parietes. He attempts to show how these nerves are to be avoided and to give the lines on which incisions may be made which will likely pass between the nerve trunks. He says of the various abdominal incisions that the least harmful is that made in the median line, either straight through or continued through the posterior wall of the sheath after the rectus has been drawn outward. It is only when these incisions are inadequate that we have to consider the nerves. Quite as harmless, if we avoid the nerve trunks, for it cuts no muscles is that made in the liniæ semilunaris. Some nerve fibers will be divided wherever we cut into muscle by any other method than proper splitting, but we can, in most cases, avoid the trunks. In the subcostal incision for approaching the gall bladder, which is four inches long parallel to and from one and one-half to two inches below the right costal border, the tenth and eleventh nerve trunks will be severed if the wall is cut straight through. The fibers of the internal oblique run parallel to the cut, so that it can be split, and in this way the nerves may be found and drawn aside. This might not be practical in the very stout. Even here part of the supply of the external oblique will be cut off, as it comes from the lateral branches. He advises approaching all obscure epigastric cases through an exploratory incision in the median line, and then, if a complicated gallstone operation requires more room, a cut can be made from the umbilicus toward the cartilage of the eleventh rib and a flap turned up containing the eighth, ninth and tenth nerves, and more room be gained than by any other incision. If it proves to be a gastric case demanding freer access, a supplementary transverse incision may be made between the eighth and ninth, or ninth and tenth nerves, preferably the former, which will not cut nerve trunks. Then, if the wound has been kept clean and well sutured, there need be no fear of hernia. In the splitting operation no nerves will be cut if Kocher's admonition is heeded, which is to use hooks and to tear the muscles apart. Practically the crooked thumbs are sufficient. Kocher's incision for appendicitis would most likely be below the twelfth nerve, provided the incision does not extend backward beyond the anterior iliac spine. The cut for suppurating cases, made one finger's breadth above the ligament, would in most cases go above the hypogastric

nerve. An extensive lumbo-lateral abdominal incision that cuts no nerves may be made as follows: A flap of any size may be raised by cutting from the tip of the last rib to the linea alba between the eleventh and twelfth nerves and then extending the incision in the median line. All of these may be modified so as to divide the rectus transversely. All incisions should be made to allow some variation, and it is only in through-and-through cuts that the variation can cause trouble.

American Journal of Medical Sciences, Philadelphia.

August.

47 Notes on Otitic Epilepsy. B. A. Randall, Philadelphia.
48 Two Fatal Cases of Brain Abscess. E. B. Dench, New York.
49 Orbital and Meningeal Infection from the Ethmoid Cells; Death. J. F. McCaw, Watertown, N. Y.
50 *Unusual Case of Edema of the Glottis. E. Mayer, New York.
51 Sarcoma of the Vomer, with Extensive Involvement of the Adjacent Structures and Metastasis in the Cranium. A. P. Herring, Baltimore, Md.
52 Lymphatic Drainage of the Faucial Tonsils. G. B. Wood, Philadelphia.
53 Obscurity of Diagnosis Sometimes Attending Stone in the Kidney. D. D. Stewart, Philadelphia.
54 Certain Hypertensive Crises in Arteriosclerotic Subjects. J. B. Briggs, Washington, D. C.
55 Tinea Versicolor in an Institution. H. J. Nichols, Washington, D. C.
56 Clinical, Bacteriologic and Metabolic Aspects of a Case of Traumatic Tetanus; Treatment with Tetanus Antitoxin; Recovery. H. Heiman, L. Buerger and E. A. Aronson, New York.
57 Epithelioma of the Vulva. H. Dittrick, Cleveland, Ohio.
58 Necrotic Stomatitis Following Measles and Pneumonia. R. M. Goepp, Philadelphia.
59 *Negative Value of Kernig's Sign. R. N. Willson, Philadelphia.
60 Diminutive Spleen. W. J. Calvert, Columbia, Mo.
61 Torsion of the Great Omentum. E. M. Corner and H. I. Pinches, London.
62 Congenital Tricuspid Stenosis Complicated by Mitral Stenosis. B. Stow, New York.

50. **Unusual Case of Edema Glottis.**—The point of interest in Mayer's case lies in the fact that the edema of the glottis was engrafted on a hereditary syphilis of the epiglottis, which latter never produced any noticeable symptoms relative to the throat, except a constant cough of twenty-eight years' duration. The absence of any initial lesion, as also of any evidence of the disease elsewhere, pointed strongly to the hereditary nature of the affection. The case also illustrates the advantage of prompt, free and deep incisions into the edematous tissue, thus avoiding the graver operation of tracheotomy, and emphasizes the value of adrenalin in the subsequent treatment of these conditions.

59. **Negative Value of Kernig's Sign.**—Willson examined 120 cases of all kinds for the purpose of determining the clinical value of Kernig's sign. As a result of his study he concludes that Kernig's sign is by no means a positive indication of either meningeal or brain or cord involvement, but that when present in association with other signs of meningitis it may be looked on as confirmatory to a high degree. Undoubtedly, in the majority of cases, it persists far into the convalescence, and is usually one of the last signs to disappear. In certain cases it probably remains as a permanent indication of a former undetermined lesion.

Bulletin Johns Hopkins Hospital, Baltimore.

August.

63 Surgical Physiology. G. W. Crile, Cleveland, Ohio.
64 Needle and Clamp for Injecting Lymphatics. W. S. Miller, Milwaukee.
65 Marcello Malpighii, 1628-1694. W. G. MacCallum, Baltimore.
66 *Typhoid Appendicitis Without Other Intestinal Lesions. W. R. Stokes and A. L. Amick, Baltimore.
67 Pathologic Anatomy of Exophthalmic Goiter. W. G. MacCallum, Baltimore.

66. **Typhoid Appendicitis.**—A case of typhoid appendicitis without other intestinal lesions is reported by Stokes and Amick. Thirteen years previously the patient had a very severe attack of typhoid. His last illness began with a severe pain in the entire abdomen, which later became localized in the right iliac region. This was followed by nausea, vomiting and slight diarrhea. An appendicectomy was performed, and the patient made a complete and uneventful recovery. The appendix was about three times the normal size and about midway between the tip and the intestinal attachment. The wall was thin and gangrenous and about to rupture from distension. The mucous membrane was covered in places with a dirty, gray, fibrinous membrane, and at its base there was an irregular ulcer. The lumen contained three soft, putty-like, light yellow concretions. The *Bacillus pyocyaneus* and *Bacillus typhosus* were found in stained sections. In some portions of the appendix the pathologic change corresponded to that seen in acute diffuse appendicitis, while in other portions where there was no surface ulceration the changes were more characteristic of typhoid, and were probably the reaction to the presence of the typhoid bacillus.

American Journal of Obstetrics, New York.

August.

68 *Report of Seven Cesarean Sections. J. D. Voorhees, New York.
69 Twisted Pedicle in Ovarian and Par-ovarian Cysts. A. Brothers, New York.
70 Treatment of Fibroid Tumors of the Uterus. J. W. Bovée, Washington, D. C.
71 Ciliated Cysts and Glands of the Uterine, Tubal and Pelvic Serosa. A. E. Blount, Oak Park, Ill.
72 *Relation of the Appendix to Pelvic Disease. R. Peterson, Ann Arbor, Mich.
73 *Inflammatory Conditions of the Appendix Accidentally Brought to Light in Pelvic Operations. H. Robb, Cleveland, Ohio.
74 *Appendicitis in Relation to Pelvic Disease and Pregnancy. A. L. Smith, Montreal, Canada.
75 *Reasons for Removing the Vermiform Appendix in Nearly All Cases in which the Abdomen is Opened for Other Lesions W. A. Baker, Boston.

68. **Cesarean Section.**—Voorhees reports seven Cesarean sections, and reviews the history of this operation as found in the literature. He concludes that Cesarean section is a dangerous operation only when infection is present; that there are too many fetal deaths from the other major operations; that in view of the low maternal mortality the field for Cesarean section should be broadened; that in contracted pelvis of a moderate degree (in the border line cases), a late induction of labor is justifiable; that when possible, difficult versions, prolonged forceps operations, and high forceps operations, performed in early labor, should be avoided. That craniectomy on a living baby is an operation only of necessity and emergency; that symphyseotomy is an operation of the past.

72.—See abstract in THE JOURNAL, Sept. 10, 1904, page 756.

73. **Id.**—June 10, 1905, page 1878.

74. **Id.**—June 17, 1905, page 1955.

75. **Removing Appendix When Abdomen Is Opened for Other Lesions.**—Baker cites cases to show that the presence of adhesions of, or fetal concretions within the appendix are not the only evidence of appendicitis which should influence the surgeon for its removal. The appearance of the normal appendix at the time of the operation has proved to be unreliable, as in three-fifths of the cases reported the patients were suffering from chronic appendicitis. The advantages to be derived as a prophylactic measure from the removal of the appendix, even in cases which prove normal, far outweigh the slight additional risk incurred by the operation. The great frequency with which appendicular troubles present themselves warrant not only the removal of the appendix, when it is easily accessible, when performing abdominal section for other lesions, but also the careful searching for and removal of it even though it may appear normal from its gross appearance.

American Journal of Urology, New York.

August.

76 Present-day Status of Tuberculosis of the Male Genital Organs. E. R. W. Frank, Berlin.
77 *Syringe Versus the Irrigator in Gonorrhea. F. C. Valentine and T. M. Townsend, New York.
78 *Some Untoward Results of Perineal Prostatectomy. G. S. Whiteside, Portland, Ore.

77. **Syringe versus Irrigator.**—Concisely stated, the position held by Valentine and Townsend with reference to the value of the irrigation treatment of gonorrhea is as follows: Even the mildest manifestation of gonorrhea spells a dangerous disease to the patient, to his wife, to his children and to the community. No honest, conscientious advocate of the irrigation treatment of gonorrhea ever claimed that a patient was cured before all the tests which present science demands have shown the permanent absence of gonococci. The irrigation treatment, like any other treatment, is positively dangerous, unless employed with caution, tact and gentleness. The immense numbers of gonorrheas successfully treated by irrigations, owe their recovery to the operator's gentleness and judgment. The technic of irrigations is not so difficult to acquire, but their successful employment requires the same scrupulous attention to details that is demanded by every other remedial measure in any other disease. The choice of

drugs used in irrigating solutions is not limited to potassium permanganate, silver nitrate or mercuric bichlorid, but is governed by the needs of each case. The guides for the selection of drugs and the strength of the solutions employed are, the condition of the discharge, the microscopic and cultural results, the character of the urine, and such involvements of the major and minor adnexa as may exist. Chronic gonorrhea is always dependent on infiltration of the urethral mucosa, involvement of the urethral crypts, glands and follicles, or invasion of Cowper's glands, the prostate or seminal vesicles, or all these; therefore, treatment of these extensions of the disease is necessary in conjunction with irrigations. When a patient with acute anterior gonorrhea comes under treatment before the adnexa are involved, he will escape complications, if irrigations are cautiously, skillfully, gently and judiciously employed. No other form of treatment will relieve pain and reduce discharge as quickly as do properly administered irrigations.

78. **Perineal Prostatectomy.**—A critical study of 238 cases, collected from many sources, leads Whiteside to say that perineal prostatectomy is considered by the majority of surgeons as the best operation in most cases. Immediate deaths result from sepsis, shock, cardiac disease, pneumonia and uremia. Remote deaths from cancer cachexia, pyonephritis embolism, and the result of secondary operations to overcome defects left by the first. Absolutely good results occur in about 30 per cent. of all the patients operated on. Sequelæ are numerous and troublesome. They include rectal fistula, urinary sinus abscess, stricture at the bladder neck, incontinence, frequency of micturition, residual urine, epididymitis, sexual impotence, cystitis, vesical calculus and urinary tuberculosis. Mistakes in diagnosis are not uncommon even in the experience of the most skillful. Carcinoma, sarcoma and syphilis have all proved stumbling blocks.

American Journal of Surgery, New York.

August.

79 Suture of Veins, Review of the subject. A. E. Isaacs, New York.
80 *Treatment of Hypertrophied Tonsils. J. T. Herron, Jackson, Tenn.
81 *Present Status of the Different Methods of Estimating the Functionating Capacity of the Kidney, with a Brief Account of Chromo-cystoscopy and Its Uses. M. S. Kakels, New York.
82 Paraffin in Surgery, Critical and Clinical Study. W. H. Luckett, and F. I. Horn, New York.
83 Treatment of Inguinal Hernia. C. B. Mallery, Aberdeen, S. D.
84 Treatment of Cancer by Thyroids Combined with X-Rays, Results in 1904. C. Am Ende, New York.

80.—See abstract in THE JOURNAL, May 6, 1905, page 1476.

81. **Estimating Functionating Capacity of Kidney.**—Kalkes considers chromocystoscopy the safest, simplest and most practical means of ascertaining the presence of the kidney. The existence of the second functionating kidney should always be assured before doing any cutting operation on the kidney, especially a nephrectomy. For practical purposes the function of the kidney is best determined by chromocystoscopy, by cryoscopy and by the phloridzin test. Of less importance for the surgeon, but of interest for laboratory investigations, are the determinations of the toxicity and electric conductivity of the urine. The most reliable method of obtaining the separate urine from each kidney is by ureteral catheterization, but this procedure requires special skill.

Western Medical Review, Lincoln, Neb.

August.

85 Hematuria of Kidney Origin. A. C. Stokes, Omaha, Neb.
86 Conservatism in Gynecology. A. B. Anderson, Pawnee City.
87 Clinical Picture and Treatment of Extrauterine Pregnancy. W. O. Henry, Omaha, Neb.
88 Pathology of Extrauterine Pregnancy. E. C. Henry, Omaha, Neb.
89 *Simple Method of Hystero-myomectomy by the Aid of a Dagger Clamp. H. M. Hepperlen, Beatrice, Neb.

89. **Use of Dagger Clamp in Hystero-myomectomy.**—The method described by Hepperlen is somewhat similar to Kelley's method. The patient is placed in the horizontal position. The abdominal incision does not exceed three inches, except when the tumor is a very large one. After the tumor is delivered a hot, sterile towel is placed snugly in the opening, having the edges come well around the neck of the tumor. The bladder is freed, if it is attached, and if the neck of the tumor can be well drawn up, Hepperlen inserts the dagger of his clamp through the center of the neck, from right to left, leaving as much of the cervix as is necessary. He then applies the clamp over the dagger, which can be drawn up to any size desired, and clamps over the neck of the growth. The ovarian arteries are then ligated on either side close down to the clamp and the tumor removed by making a "V"-shaped cut from either side of the neck down to the dagger. The uterine arteries and veins are picked up and tied twice with Tait's fine table-twist silk. Both sides of the clamp are then opened, one at a time, to see that all hemorrhage is controlled. The stump is then closed over with catgut sutures, from four to six in number, leaving them long so that the stump can be held up by them after the dagger is removed for the purpose of inspecting the large vessels. With the fine catgut suture the whole field is closed over from left to right by stitching the peritoneum over the ovarian vessels and stump, as recommended by Kelley. In the beginning of the operation, should there be adhesions which bind down the tubes and ovaries in the broad ligaments, the ovarian arteries are ligated and cut down on each side of the broad ligaments. This makes it very easy to raise the neck of the tumor up far enough to insert the dagger as low as desired. Hepperlen says that the operation is bloodless; that it can be done in less than half the time required by any intraperitoneal method; that there is less exposure of the internal viscera and less shock, with a lower mortality, than from any other method.

Iowa Medical Journal, Des Moines, Iowa.

July 15.

90 President's Address. D. C. Brockman, Ottumwa.
91 Most Powerful Light in the World—to be Used in the Treatment of Tuberculosis. J. W. Kime, Ft. Dodge.
92 Traumatic Glaucoma.. A. R. Amos, Des Moines.

Interstate Medical Journal, St. Louis, Mo.

July.

93 Superstition in Medicine. M. G. Seelig, St. Louis.
94 Brief History of Preventive Medicine. G. C. Crandall, St. Louis.
95 Sir Kenelme Digby, 1603-1665. J. M. Ball, St. Louis.
96 Osteology and the General Practitioner. V. P. Blair, St. Louis.
97 Proper Diet in the Tropics. H. W. Wiley, Washington, D. C.

Northwest Medicine, Seattle, Wash.

July.

98 Electric Injuries. E. R. Edson, Seattle, Wash.
99 Medical Treatment of Gallstones. H. Richardson, Baltimore, Md.
100 Prophylaxis of Syphilis and Its Sequelæ. W. House, Portland, Ore.

California Medical and Surgical Reporter, Los Angeles, Cal.

July.

101 Address Delivered Before Graduating Class of Pacific Hospital Training School for Nurses of Los Angeles, May 13, 1905. J. L. Hagadorn, Los Angeles.
102 Clinical Course of Arteriosclerosis and Chronic Vascular Hypertension. D. Fulton, Los Angeles.
103 General Medical Library for Los Angeles. R. Moore, Los Angeles.
104 Infancy and Adolescence. W. A. Edwards, Los Angeles.
105 Diagnosis of Surgical Lesions of Kidneys. C. D. Lockwood, Los Angeles.

Medical Herald, St. Joseph, Mo.

July.

106 Treatment of Puerperal Fever. R. C. Moore, Omaha.
107 Diagnosis of Puerperal Fevers. R. T. Sloan, Kansas City.
108 Chorio-Epithelioma Malignum. A. P. Condon, Omaha.
109 *Acute Epidemic Dysentery. L. B. Pilsbury, Lincoln.

109.—See THE JOURNAL, July 15, 1905, page 182.

Archives of Pediatrics, New York.

July.

110 Medical Supervision of Schools and the Progress of School Hygiene. C. G. Jennings, Detroit.
111 Important Differential Points in Diagnosis of Sporadic Cretinism, Mongolism, Achondroplasia and Rachitis. C. Herrman, New York.
112 Chemistry of Cow's Milk. L. L. Van Slyke, Geneva, N. Y.

Journal of Ohio State Medical Association.

July.

113 Surgical Diagnosis in General Practice. J. B. Roberts, Philadelphia.
114 President's Address, Ohio State Medical Association, Sixtieth Annual Meeting. S. S. Halderman, Portsmouth, Ohio.
115 Address of Welcome to Ohio State Medical Association, May 10, 1905. S. Loving.
116 Early Recognition of Glaucoma. S. C. Ayres, Cincinnati.
117 Three Cases of Mushroom Poisoning. S. G. Sewell, Greenville, Ohio.

Journal South Carolina Medical Association, Charleston.

July 21.

118 Appendicitis. L. Guerry, Columbia.
119 Pediatrics, Past, Present and Future. E. A. Hines, Seneca.
120 Acute Lobar Pneumonia. J. H. Allen, Spartanburg.

121 Fractures of Every Limb; Recovery. M. J. D. Dantzler, Elloree.
122 Cerebrospinal Meningitis: Hydrophobia. D. Furham, Greenville.

Medical Sentinel, Portland, Ore.

July.

123 Pathology of Lachrymal Gland in Hereditary Syphilis. Wm. L. Wood, Portland.
124 Facts Concerning Bald Heads. H. M. Shaw, Portland.
125 Paratyphoid Septicemia Report. W. C. Belt, Portland.
126 Progressive Muscular Atrophy. R. L. Gillespie, Portland.
127 President's Address, Portland City and County Medical Society. J. F. Dickson, Portland.

Postgraduate, New York.

July.

128 Patient Cured of Tubercular Disease of Ankle Joint by Excision, and One Cured of Hip-joint Disease. W. O. Plimpton, Brooklyn.
129 Case of Idiopathic Atrophy of the Skin. R. Abrahams, New York.
130 Case of Cystic Kidney. S. S. Burt, New York.
131 Epidemic Cerebrospinal Meningitis. W. H. Porter, New York.
132 Amebic Dysentery Treated by Appendicostomy. E. W. Peterson, N. Y.
133 Contribution to Study of Strabismus, with especial Reference to the Operation of Panas for Its Relief. E. S. Peck, New York.
134 Syphilitic Lesions of Nose and Throat. C. Graef, New York.

American Journal of Surgery, New York.

July.

135 Etiology and Treatment of External Biliary Fistula; Report of Case Due to Stricture at Neck of Gall Bladder. L. W. Allen, San Francisco, Cal.
136 Technic of Cervical Sympathectomy. W. F. Campbell, Brooklyn, N. Y.
137 Etiology and Pathology of Appendicitis, Based on Clinical and Bacteriologic Examination of Twelve Cases. W. Lenehan, Nashville, Tenn.
138 Etiology, Diagnosis and Treatment of Mastoiditis. W. C. Phillips, N. Y.
139 Inversion of Uterus. P. L. Markley, Rockford, Ill.
140 Paraffin in Surgery, Critical and Clinical Study. W. H. Luckett and F. I. Horn, New York.

Texas Medical News, Austin.

July.

141 Scabies. E. A. Blount, Dallas.

American Practitioner and News, Louisville, Ky.

August.

142 Hysteria. O. R. Reesor, Louisville.
143 Gastric Ulcer. J. R. Morrison, Louisville.
144 Tonsillotomy. G. M. Peavler, Louisville.
145 Appendicitis. C. W. Fleenor, Holston Valley, Tenn.
146 Duty of Medical Examiners. H. N. Leavell, Louisville.
147 Osteopathy. D. Graham, Boston, Mass.
148 Reflex Ovarian Conditions, Their Causes, etc. A. D. Willmoth, Louisville.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 19.

1 Abdominal Surgery During the Last Twenty-five Years. G. S. Hatton.
2 Physical Degeneration and Syphilis. F. J. Lambkin.
3 Dynamic and Hydro-Dynamic Effects of Modern Small-bore Cylindro-Conoidal Projectiles. C. M. Beadnell.
4 Feeding of the Soldier on Active Service. G. S. Robinson.
5 Care of Soldier's Feet. G. S. Crawford.
6 Suggestions for First-aid Treatment of Fractured Thigh in Military or Civil Practice. J. J. de Z. Marshall.
7 Dysentery and Its Treatment on Active Service. G. A. Hutton.

The Lancet, London.

August 19.

8 Chemical Correlation of the Functions of the Body. E. H. Starling.
9 *Congenital Hypertrophic Stenosis of the Pylorus, Successfully Treated Without Operation. W. J. Harper and J. R. Harper.
10 *Subdiaphragmatic Transperitoneal Massage of the Heart as a Means of Resuscitation. H. M. W. Gray.
11 Presence of Pigment Containing Iron in the Thyroid Gland. G. L. Gulland and A. Goodall.
12 *Case of Mixed Leukemia. C. H. Browning.
13 Notes on Abdominal Surgery Based on Completed Records of 744 Cases. (Continued.) E. S. Bishop.
14 Continuity of the Several Cavities of the Middle Ear. A. H. Young and W. Milligan.
15 General Staphylococcic Infection Treated by Antistaphylococcic Serum and Hetol; Death. E. F. Maynard and F. G. Bushnell.
16 Elementary State Schools and the Spread of Contagious Diseases of the Skin. P. S. Abraham.
17 Staining Reactions of the Spirochetæ Found in Syphilitic Lesions. L. S. Dudgeon.
18 *Two Cases of Addison's Disease and the Effect of the Administration of Suprarenal Extract. A. G. Gullan.

9. **Congenital Hypertrophic Stenosis of Pylorus Treated Without Operation.**—About three weeks after birth, the Harpers' patient began to manifest the symptoms of pyloric stenosis, and these were confirmed by careful physical examination. The question of operative interference was frequently discussed during the earlier stages of the child's condition, but was abandoned owing to the apparently hopeless condition. Abdominal massage with cod-liver oil was resorted to in despair, and from the progress of the case it was evident that a certain amount of oil was absorbed through the skin, and to this fact the authors attribute a certain proportion of the success of the treatment. The infant also received injections of normal saline solution, about half a pint, twice daily, and small quantities of peptonized milk and water every two hours for about four weeks, and with but few additions for three months. In massaging the abdomen, particular attention was paid to massage of the stomach wall toward the pylorus. The authors appear to consider the massage and the saline injections the essentials of the treatment.

10. **Subdiaphragmatic Transperitoneal Massage of Heart.**—Gray's patient was apparently dead from a cancerous obstruction of the larynx. There was no pulse at the wrist, no cardiac impulse, no cardiac sounds, and all the evidences of death were present. The abdomen was opened in the middle line immediately under the xiphoid cartilage, and through this opening the heart was massaged about four minutes, the rate of compression being from 70 to 90 per minute. After ten minutes of massage, the heart began to beat and the patient took a rather deep spontaneous breath. Slight hemorrhage occurred from the abdominal wound. The patient died about three hours afterward, having never regained consciousness.

12. **Mixed-Cell Leukemia.**—A case of this kind is reported by Browning occurring in a man, aged 57. He summarizes his paper as follows: 1. Myeloid leukemia is due to a hyperplasia of myeloid tissue; but the unknown causative agent is irregular in its action, so that any of the various granular types may predominate or a mixed-cell blood picture may result from the reversion of many of the cells to the condition of the non-granular undifferentiated leucoblast or from the hyperplasia of such non-granular cells normally present in the marrow in small numbers. These undifferentiated leucoblasts may assume their embryonic activity and secrete granules. 2. In leukemias a mixed-cell blood picture may be due to: (a) a reversion of myeloid cells to the embryonic non-granular type; and (b) a reaction or mechanical disturbance of myeloid tissue owing to lymphoid hyperplasia with as a result the passage of myelocytes into the circulation. 3. It is to be understood that it is left quite an open question as to whether or not myeloid and lymphoid tissue may be concomitantly affected in a way similar to what occurs in myeloid and lymphoid leukemias, respectively. If such occurred then we should have a mixed leukemia, in the strict sense.

18. **Addison's Disease.**—The special points of interest in the two cases reported by Gullan are the severity and rapid progress of the disease in one of the cases, though the lesion was that of chronic tuberculosis of the suprarenal bodies, plus secondary inflammation of the neighboring sympathetic, and the little benefit derived from the administration of suprarenal extract, so that the patient easily stood the strain of pregnancy and parturition, are the points of interest. The suprarenal extract was given in doses of up to 20 grains three times daily, beginning with a five-grain dose.

Indian Medical Gazette, Calcutta.

August.

19 Treatment of Fractures. F. W. Sumner.
20 Two Cases of Pneumococcus Septicemia with Some Remarks on Pneumonia as Seen on the North-West Frontier of India. F. N. White.
21 *Obscure Irregular Continued Fevers of the "Typhoid" Group and Their Probable Relation with Different Species of Bacilli of the Typho-Coli Race. R. Row.
22 Preliminary Paper on Extirpation of the Lachrymal Sac in India. R. H. Elliot.
23 *Plague Infection and Flies. F. N. Windsor.
24 Bactericidal Power of Lieutenant Nesfield's Method of Purifying Drinking Water and Sterilizing Water for Surgical Purposes. F. N. Windsor.
25 Puerperal Convulsions. A. M. Dallas.

21. **Typhoid in India.**—Although for many years it was a disputed point whether or not the natives of India could ever

contract typhoid, the results of recent observations on this subject, according to Row, may be taken to leave no doubt that these natives not only do get the disease, going through the usual clinical course, but also that the nature of the disease can be verified both bacteriologically and, when occasion arises, postmortem. Row has confirmed this belief by a careful study of twenty-three cases.

23. **Flies and Plague.**—The experiments and investigations made by Windsor with a view of obtaining evidence for or against the conveyance of plague infection by flies showed that flies which have had access to material containing plague bacilli (i. e., the plague blood in the watch glass) can carry infection and inoculate a wound. Hence, the sputum from a case of pneumonic plague and the juices of a fresh plague body (as in a postmortem room) may be a grave source of danger Such flies do not appear to convey infection by means of food on which they settle. Flies which have had access to a plague body, but not to the fresh juices or blood, do not appear to be a source of danger. It is almost certain that the juices arising from decomposition do not contain living plague bacilli. In the experiments the absence of fleas from all the rats was insured.

Australasian Medical Gazette, Syndey.

July 20.

26 Cases of Arrested Pulmonary Tuberculosis from King's Tabeland Sanatorium, N. S. W. M. M. Sinclair.
27 Trend of Modern Midwifery. J. R. Purdy.
28 *Use of Liquid Air in Surgery and Skin Diseases. T. G. Beckett.
28½ Catarrh. C. L. M. Iredell.
29 *Preliminary Communication on the Treatment of Arteriosclerosis. E. Hirschfeld.
30 Two Cases of Hypnotic Treatment. R. T. Michell.
31 Sudden Case of Goiter. W. Macansh.

28. **Liquid Air in Surgery and Skin Diseases.**—Liquid air, if applied to the skin lightly and cautiously repeated for a few minutes, Beckett says, will produce a refrigerating effect of any degree of intensity desired, with a resulting complete local anesthesia under the influence of which small surgical operations can be done. If applied too freely and for too long a time, frost-bite effects are produced, even to causing ulceration of the skin. The application is not painful unless the parts are tender and sensitive. Beckett has made use of liquid air in cases of a superficial and more or less malignant nature that have existed and have been incurable for a length of time, such as lupus, rodent ulcer and small epitheliomas. Compared with the *x*-rays, the effect of liquid air is instantaneous; it acts superficially and its use is very simple. All the apparatus required, besides the liquid air, is a suitable glass rod with a small piece of cotton wool wound around the tip of it, the size and shape depending on the degree of intensity required to be attained. When the surface is raw or ulcerated, it is advisable to cut and to place over it a small piece of gauze; otherwise the cotton wool will be quickly frozen to the surface.

29. **Treatment of Arteriosclerosis.**—The systematic employment of hot baths is vaunted by Hirschfeld as a satisfactory treatment of arteriosclerosis. The effect of the hot bath on the patient suffering from arteriosclerosis is fourfold: 1. It alters the distribution of blood pressure by unloading the internal organs and by increasing the vascularization of the skin; hence, it affords prompt relief in many of the cases of pain associated with internal gout, that frequent source of arteriosclerosis. 2. It increases combustion. 3. It increases the elimination of waste products. 4. By opening the channels of the skin, it reduces the pressure of the blood by bleeding the patient into the skin. In every instance, it is necessary to ascertain exactly the reaction of the individual. One may safely begin with a temperature of 102 degrees if the patient is not above 55 or 60; in women it is safer to begin at 100 degrees. The time of immersion should not be less than ten minutes, although Hirschfeld rarely had to exceed that time. The determining factor in the management of the patient is the condition of the left heart, the quality and loudness of the first and second aortic sounds. Without a vigorous left heart the hot bath must be used with caution. Hirschfeld warns against the indiscriminate use of the hot bath when there is not a good systematic pressure and a vigorous systolic output to start with. While these two conditions obtain in arteriosclerosis, favorable results will follow the treatment indicated.

Journal of Tropical Medicine, London.

August.

32 Hemogregarine of Mammals. H. Jaculi, A. Balfour.

Presse Médicale, Paris.

33 (No. 56.) Le service des délirants de l'Hotel-Dieu (delirious patients in Paris Hospital). G. Ballet.
34 *Résection des nerfs dans la gangrène douloureuse des membres. Bardesco.
35 (No. 57.) Le traitement de la migraine et le canabis indica. G. Carron de la Carrière.
36 (No. 58.) *Inversion thermique et monothermie. A. Gilbert and P. Lereboullet.
37 *L'hémato-aspiration. G. Laurens.
38 (No. 59.) *Le diurèse par les boissons (after drinking). M. Labbé.
39 Les fausses appendicites (pseudo). J. De Nittis.
40 *Flacons aseptiques utilisés comme burette et comme seringue à injections hypodermiques.
41 (No. 60.) La crêche idéale. V. Bué.
42 *Mécanisme de l'évolution du paludisme. M. Le Ray.
43 (No. 61.) Sur les lésions métatyphiques du systeme osseux (of skeleton). A. Christides (Constantinople).
44 *Corps étrangers de l'oesophage et oesophagoscopie (foreign bodies). J. Moure.
45 (No. 62.) *Les diabètes d'origine infectieuse. M. Labbé.
46 Toxémie appendiculaire à localisation gastrique et nerveuse, nécrose suraigue de la muqueuse gastrique. M. Dupont.
47 (No. 63.) The Insane in the European Colonies in the Far East.—La condition des aliénés dans les colonies françaises, anglaises et neerlandaises d'Extrême-Orient. E. Jeanselme.
48 Tests for Horse Meat.—La recherche de la viande de cheval dans les produits manipulés de la charcuterie. H. M. Martel.
49 Report of Fifteenth French Congress of Neurology, Rennes, August 1-7.

34. **Resection of Nerves in Painful Gangrene.**—Bardesco has found it necessary to relieve the pain of gangrene of the leg before he could proceed to amputation. Stretching the nerve brought transient relief, but epidural injections of cocain were entirely useless. He finally resected the internal and external popliteal nerves for a distance of about 5 cm. The pain was arrested at once and the general health improved, the edema of foot and leg subsided and the gangrene became demarcated. The portion finally requiring amputation was much smaller than was at first supposed necessary, and the patient was spared unnecessary crippling. Recovery was rapid and complete, and no sensory or trophic symptoms have developed to date. He proposes in future merely to sever the nerve and to suture the wound. This would relieve the pain while the nerve would become regenerated later, allowing the gangrene time for elimination. These operations on the nerves enable the secondary amputation to be done under much more favorable conditions.

36. **Thermic Inversion and Monothermia.**—Gilbert applies the first of these terms to a condition in which the temperature reaches its maximum in the morning. He has coined the second term to express the condition in which the temperature remains the same morning and evening. Both are probably due to the influence of some digestive or biliary toxic infection, and are liable to be observed in almost any affection due to autoinfection.

37. **Vacuum Cleaning Applied to Operative Wounds.**—Laurens gives an illustration of his little vacuum aspirator, attached to a faucet. It works on the principle of the vacuum cleaning apparatus, sucking all the fluids and loose particles out of the wound. He has found that it reduces the length of otorhino-laryngeal operations, prevents aspiration of secretions and keeps the wound cleaner than any other measures. It does not siphon out blood, as the mouthpiece is placed over the wound only when there are secretions, blood and scraps to be aspirated, and is not kept there all the time. Of course, tamponing is necessary in some cases, but in the majority this aspiration technic is sufficient and renders the compress superfluous. The operator has always a clean field before him.

38. **Diuresis from Drinking.**—Labbé's tracings show the prompt diuresis that follows ingestion of liquids fasting. When taken with food they are not evacuated so promptly by the stomach. He suggests the term "oligoposy" to express the disturbances that result from not drinking enough fluids. It entails oliguria, irritates the kidneys, produces albuminuria and leads to gout. A large glass of any warm infusion, morning and evening, washes out the organism effectually.

40. **Burette Vials.**—The outer part of the large stopper of the vial is like a graduated inverted test tube. The male portion of the stopper is shaped like a syringe piston and its prolongation extends nearly to the floor of the vial for a delivery tube. Inside it is a loose glass plug to act as a valve. When the graduated part is fitted over the inner part of the stopper the fluid in the vial rises into the hollow inner part whenever the female part of the stopper is slightly raised. The communication between the aspirated fluid and the body of the vial is interrupted by the glass plug which serves as a valve to close the lumen of the inner part of the stopper. The fluid that has been thus aspirated into the graduated part of the stopper can then be used at will for hypodermic injection or otherwise. The tip of the outer stopper is finished so that a Pravaz needle can be screwed on it, or it is bent like a retort with a cup on the end to hold the fluid. An illustrated description of the vial is also given in the *Bulletin de l' Acad. de Méd.*, No. 30.

42. **Pathogenesis of Malaria.**—Le Ray has had long experience in the tropics and he has become convinced that the frequency, the persistence and the intensity of epidemics caused by infectious germs are determined: 1, By the degree of concentration of some miasma in the atmosphere, that is, the degree of toxicity of the gases emanating from the decomposition of some special organic matter; 2, by the evolution of the meteorologic phenomena before and during the epidemic; 3, by the degree of the physiologic fatigue experienced by the people in general and by individuals in particular. Pathogenic germs may remain a long time in a state of latent microbism, but this state is extremely unstable, depending on the relations between the nervous energy and the sum of the forces striving to break it down.

44. **Foreign Bodies in Esophagus.**—Moure preaches that radiography should be applied as the first measure in case of a foreign body in the esophagus. Blind attempts to extract the body and external esophagotomy should be very rarely attempted nowadays.

45. **Diabetes of Infectious Origin.**—Labbé's patient was a man of 45, obese, previously healthy, who had a febrile sore throat. Immediately after recovery symptoms of diabetes developed, disturbances in vision, polyuria, emaciation and elimination of 415 gm. of sugar a day. He was placed on a diabetic diet with two glasses of Vichy before meals. All symptoms of the diabetes had vanished by the end of a month, and the patient has been in perfect health during the two years since. Another patient was a woman of 67, obese at one time, but not for several years. After an acute febrile nasopharyngeal infection she likewise developed symptoms of diabetes, which also subsided after a few weeks of dieting and Vichy water. Labbé reviews the literature on the subject and remarks that the classification of diabetes as pancreatic, nervous, hepatic, etc., is illogical. The functioning of the sugar-regulating apparatus is disturbed, not any special organ in the group forming this apparatus.

Semaine Médicale, Paris.

50 (XXV, No. 30, July 26.) *Le traitement de la phlébite des membres. H. Vaquez.
51 (No. 31.) *Sudden Death in Pleurisy.—La mort inopinée chez les pleuretiques: mort subite et mort rapide. M. Roch.
52 (No. 32.) New Prussian Law on Communicable Diseases.—La nouvelle loi prussienne sur les maladies transmissibles. De Maurans. See foreign news columns.

50. **Treatment of Phlebitis.**—Vaquez outlines the treatment suitable for obliterating phlebitis of the large veins, for subacute venous septicemia and for recurring phlebitis. Immobilization in the former should be absolute. He does not use a cast, but holds the leg immovable by strips across it at the knee and above and below, the strips pinned firmly to the mattress. Another strip holds the foot immovable at a right angle to the leg. A strip across the lower part of the trunk is likewise pinned to the mattress or tied to the side bars of the bed. This technic allows supervision of the various parts of the limb without raising it, as would be necessary with a cast. Sedative applications at first are followed by fomentations with a natural saline water for three or four hours, the part powdered with talcum, chalk, magnesia and resorcin powder in the interim. When the temperature has been normal for twenty days, and the veins are indolent to palpation and the edema is retrogressing, then partial passive mobilization may be commenced, limited to ankle and toes. From the twenty-seventh to the thirty-fifth day the muscles may be massaged, and at this time the knee and the trunk can be released. By the fortieth day the patient can be allowed to take a few steps. An elastic stocking should not be worn at first, but merely a light bandage wound from the foot to the thigh before the patient is allowed to get up. This promotes the establishment of collateral circulation. A crutch should not be allowed, as this favors vicious attitudes. Subacute venous septicemia or multiple, relapsing phlebitis, requires different treatment, measures to combat varicose congestion and to prevent the entrance of germs into the enlarged veins. The slightest phlebitis of this nature demands rest in bed with immobilization for twenty days, followed by passive movements of the joints; the rest of the limb does not require mobilization or massage, and these measures arouse the phlebitis again. An elastic stocking is needed when the patient gets up. Surgical intervention should be reserved for protracted phlebitis with successive emboli from disintegration of the clot and danger of septicemia. It is also indicated in case of circumscribed, infected varicose ulcers. Each reawakening of the subacute venous phlebitis should be treated like a new focus, and mobilization should not be commenced until twenty days after the temperature has returned to normal. Local treatment should be the same as previously mentioned. The fomentations are especially effectual in aiding resolution in these cases, as the veins and perivenous surrounding tissue are accessible. In recurring phlebitis in gouty subjects, immobilization is still the rule, for mobilization, massage, etc., do more harm than good. Postphlebitic accidents are generally the result of absurdly long immobilization, from three to twelve months. The pain and edema are best treated by mild hydrotherapy, effleurage and electricity. Massage under hot running water acts on the trophic trouble and on the muscular atrophy common in postphlebitic edema. He asserts that this delicate but energetic treatment which he recommends for the various forms of phlebitis, effects cures without causing a train of sequelæ.

51. **Sudden Death in Pleurisy.**—In menacing death from asphyxia in pleurisy, preventive treatment should include punctures, lying on the affected side and refraining from any exertion and from drugs that may depress the respiratory functions, such as morphin. When the impending fatal termination is due to reflex inhibition, preventive treatment should aim to avoid sudden movements, exertion and constipation. Morphin should be given in case of violent cough or pains. Curative measures should comprise massage and electricity to the heart, artificial respiration, traction of the tongue and stimulation of the skin. The asphyxia is generally preceded by attacks of dyspnea and inability to lie on the sound side, cyanosis and signs of heart weakness.

Berliner klinische Wochenschrift.

53 (XLII, No. 27.) *Zur operativen Behandlung der puerperalen Pyämie. E. Bumm.
54 *Orifice vaginal et Vaginisme. P. Budin.
55 *Rupture of Cesarean Wound.—Ueber die Zerreissung der alten Kaiserschnittsnarbe bei nachfolgender Schwangerschaft. R. Werth.
56 *Myom und Menopause. Winter.
57 Medicolegal Aspect of Retained After-birth.—Schwierigkeiten bei der forensischen Begutachtung von zurückgebliebenen Nachgeburtstellen. O. Küstner.
58 Zur Pathologie der Extrauterin-Schwangerschaft (pregnancy). M. Hofmeier.
59 Wie erreichen wir am besten das Ziel, den Uteruskrebs auf operativem Wege zu heilen? (uterine cancer). J. Pfannenstiel.
60 Albuminurie in der Gravidität und künstliche Frühgeburt. J. Veit.
61 (No. 28.) *Ueber pathologische Veränderungen und Spirochæte pallida bei congenitaler Syphilis. V. Babes and J. Panea.
62 Influence of Alkalies and Acids on Stomach Secreting Function.—Experimentelle Untersuchungen über den Einfluss von Alkalien und Säuren auf die sekretorische Funktion der Magenschleimhaut. A. Bickel.
63 *Beobachtungen über maligne Mäuse-Tumoren (on mice). P. Ehrlich and H. Apolant.
64 *Drei Fälle vaginaler Ovariotomie nach Dührssen. K. Reinecke.
65 *Vorkommen von Spirochaeten bei ulcerierten Carcinomen. E. Hoffmann.
66 *Treatment of Acute Suppurative Otitis media with Passive Congestion.—Ueber die Behandlung der acuten eitrigen Mittelohrentzündung mittels Stauungshyperämie nach Bier. Heine.

53. **Operative Treatment of Puerperal Pyemia.**—Bumm relates the histories of 5 patients with puerperal pyemia treated by ligation of the ovarian and hypogastric veins, with 3 recoveries. One was a case of acute pyemia after abortion, the others were chronic cases. His experience teaches that it is not necessary to attempt the extirpation of the uterus in case of puerperal pyemia, but merely to ligate and to resect the affected ovarian veins and to be content with simple ligature of the hypogastric veins. Applied in time, these measures are almost certain to cure. As the circulation through the parts is arrested, the suppurative thrombotic masses are no longer swept into the general circulation and the chills cease. The pus will be gradually absorbed in the tied-off portions of the veins or a local abscess may form, requiring evacuation. Abortive chills and moderate temperature, such as follow operations for sinus thrombosis, are liable to occur when the abscess is opened, but cause very little disturbance. In the acute case, the blood was being overwhelmed with infectious matters and the number of polynuclears and eosinophiles was constantly declining, but as soon as the veins were ligated, these cells rapidly increased and soon regained their normal proportions.

54. **Treatment of Vaginismus.**—Budin has cured a number of patients by stretching the entrance to the vagina under local anesthesia with vaselin containing 1.2 parts cocain to 30 parts vaselin. He accomplishes this by gradual dilatation with the vaselined fingers and the introduction of Hegar tents.

55. **Tearing Open of Old Cicatrix from Cesarean Section in Later Pregnancy.**—Werth has had an experience of this kind, and analyzes 11 similar cases in the literature. Among the points learned is the importance of preventing vigorous contractions of the uterus after the Cesarean wound has been sutured. The contractions should be reduced to the minimum, as they interfere seriously with the consolidation of the wound. The uterus should not be tamponed, on this account, unless absolutely necessary, and only to the smallest possible extent. The wound should be sutured to ensure perfect adaptation and rest and to promote healing. The diagnosis of rupture of the uterus was generally easy on account of the indications of severe internal hemorrhage, but in a few instances the general health did not seem to be much impaired, as the loss of blood was comparatively small, owing to the location of the placenta just below the old scar. This allowed the fetus and after-birth to pass at once through the rupture, and the hemorrhage was arrested by the retraction of the emptied uterus.

56. **Myoma and the Menopause.**—Winter's statistics show that the menopause did not occur until after 55 in a third of his 718 cases of myoma. Of his 437 patients under 45, only 9 were in the menopause, only 15 in 170 were between 45 and 50, while the menopause had just commenced in 37 out of 111 over the age of 50. His experience further indicates that patients with myoma are liable to serious symptoms at any time until after the menopause is fully established. Fully 17 per cent. of his patients had to submit to an operation for myoma after the age when the menopause usually commences in normal women. In 19 cases, the myoma caused disturbances necessitating an operation some time after the menopause had been fully established, but in the majority of cases the latter arrests the growth of the neoplasm, and abolishes all disturbances from it, as the myoma shares in the senile involution of the uterus. The symptoms observed from the myoma in the menopause may be due to the expulsion of a subserous myoma or to an increased tendency to sarcomatous degeneration or to hemorrhages. Myomata sometimes continue to grow after the menopause. In his patients, operations undertaken for myoma during the menopause represent 5 per cent. of a total of 392.

61. **The Spirochete and Syphilis.**—Babes and Panea found the *Spirochæte pallida* in one case of congenital syphilis almost immediately after death, congregated in the blood, lymph glands, liver and suprarenals in pure cultures. These organs were the ones that showed the syphilitic changes in the most pronounced form. In two other children with congenital syphilis, as also in this one, the syphilitic changes in the organs were more marked than in adult syphilis. No spirochetes were found in the other non-syphilitic children examined. The syphilitic infants were from one to four weeks old, and in the hemorrhagic case the blood presented peculiar leukemic findings. All the organs and tissues seemed to have suffered from the action of the syphilitic toxin. Spirochetes were found in each of the three infants, and were most numerous at the points where the syphilitic changes were most apparent.

63. **Malignant Tumors in Mice.**—Ehrlich's experiences with 164 mice inoculated with malignant tumors revealed a number of interesting points. Out of 71 primary tumors only 10 proved transmissible, but with some of these none of the inoculations were failures. In one instance a carcinoma had been inoculated through several generations when suddenly a typical, spindle-celled sarcoma developed in the carcinoma, crowding out entirely the carcinoma cells. The sarcoma was inoculated further through 26 generations without modification in its elements. Simultaneous inoculation with carcinoma and sarcoma cells resulted in the production of a mixed tumor, but in succeeding generations the carcinoma elements always predominated more and more.

64. **Vaginal Ovariotomy.**—Reinecke quotes Pozzi's remark that Dührssen's vaginal Cesarean section was the last great achievement in surgery of the nineteenth century, and adds that he regards Dührssen's vaginal celiotomy as one of the most important triumphs in gynecology which that century produced. He gives the details of 5 cases in which he performed vaginal ovariotomy with extremely favorable results. Dührssen's vaginal fixation with silkworm, below the insertion of the tube, with isolated suture of the opening in the peritoneum between bladder and uterus, is the ideal fixation, he thinks. This isolated suture of the fold of peritoneum induces seroserous union which holds the uterus in antefixation while it does not interfere with its normal enlargement during a pregnancy. The threads are not removed for six weeks. It is certain, Reinecke concludes, that the former unfavorable attitude of many gynecologists is changing to a more favorable view as experience is demonstrating the advantages and the harmlessness of Dührssen's technic.

65. **Spirochetes in Ulcerating Carcinoma.**—Hoffmann has found spirochetes in three cases of this kind, but states that the spirilla differed in several respects from the *S. pallida* found in syphilitic lesions.

66. **Artificial Hyperemia in Treatment of Otitis.**—Heine is assistant at Lucae's ear clinic at Berlin, and here relates his experience with 19 cases of acute otitis media, with and without mastoiditis, treated by Bier's method of artificially induced hyperemia. This method of seeking to cure by artificially increasing the inflammation proved successful in the cases with abscess formation, but in the others it seemed to postpone the inevitable operation, and possibly to allow the best moment for intervention to pass. Out of the 19 cases 9 patients were entirely cured, in 2 the mastoiditis has apparently subsided, and in 8 an operation had to be done later. The congestion was induced by a rubber strap around the neck, only tight enough to induce a slight cyanotic, swollen appearance in the face. It was applied at 11 a. m., left for twenty-two hours, and replaced after an interval of two hours. The patients did not seem to mind it much after the first. In one case of mastoiditis, apparently requiring immediate operation, the patient has almost entirely recovered under this congestion treatment without further intervention.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

67 (XXXI, No. 29, July 20.) *Die Therapie der Prostatahypertrophie. F. M. Oberländer.
68 *Entstehung und Wesen der Gicht (essence of gout). H. Klonka.
69 Weitere Untersuchungen über die antagonistische Wirkung normaler Sera. R. Pfeiffer and E. Friedberger.
70 Fortschrite in der Behandlung der Hautkrankheiten (progress in skin diseases). V. Klingmüller.
71 Fall von Mediastinal-Tumor erfolgreich mit Röntgen-Strahlen behandelt. A. Clopatt.
72 Ueber Lokal-Anästhesie. E. Impens.
73 Eine einfache und schnelle Methode zur deutlichen Darstellung der Spirochaete pallida. M. Oppenheim and O. Sachs.
74 Adhesive Plaster Bandage for Flat-Foot.—Zur Behandlung des statischen Plattfusses. G. Muskat.

67. **Treatment of Hypertrophied Prostate.**—Oberländer concludes his clinical lecture with the assertion that systematic evacuating catheterization has not only a symptomatic action, but is directly curative and generally wards off the necessity

for surgical intervention. He remarks that the proper choice of the catheter to use is the criterion of the result to be expected. Several catheters should be at hand, of from 14 to 15 Charrière and 40 cm. long. The Mercier curve is the best, not more than 130 to 150 degrees, and end in a cone rather than in an olive tip. On the slightest suspicion of a crack in the varnish the catheter should be discarded. The tip should always curve upward when being introduced. The great blunder is to catheterize at too long intervals. Four times a day generally suffices, supplemented by rinsing the bladder with a warm, saturated solution of boric acid.

68. **Essence of Gout.**—Kionka describes a number of interesting experiments on the origin and nature of gout which he has been conducting with Frey. He found degenerative processes constant in the liver and kidneys of mice fed exclusively on meat. He also noted the total absence of the glycocol-destroying, urea-forming ferment in the liver of gouty subjects. He does not believe that pathologic changes in the liver are necessary for the production of gout, but that functional disturbances must certainly exist. Functional disturbances in the liver are very liable to entail disturbances in the urea metabolism. The absence of the glycocol-destroying and urea-forming ferment in the liver may be congenital or may be the result of improper diet or of constitutional poisoning. The remedies which have proved useful in gout owe this property probably to their beneficial action on the functions of the liver. Colchicin and benzoic and salicylic acids are powerful cholagogues, and they thus improve the conditions of the circulation in the liver. This is also accomplished by certain purgatives, hydrochloric acid, etc. Benzoic, salicylic and quinic acids have a further beneficial action in that they bind the glycocol and thus prevent its exerting a precipitating action on the uric acid in the organism. The presence of glycocol with a large amount of urea entails precipitation of urates. When there is a gouty tendency, that is, a lack of glycocol-destroying ferment, urates are precipitated. This occurs in cartilage and in connective tissue when glycocol is generated in them by nutritional disturbances.

Wiener klinische Rundschau.

Last indexed, XLIV, page 1971.

75 (XIX, No. 17.) *Zur Frage der Misch-Infektion bei der Lungen-Tuberkulose. A. Pick. (Commenced in No. 15.)
76 Fall von Lungen-Hernie. S. Goldflam. (Commenced in No. 15.)
77 (No. 18.) Das Moskito-Fieber (fever). K. Steiner.
78 Dentistry in School, Army, Prison and in Sickness Insurance.—Die Zahnpflege in Schule, Armee, Gefängnis und Krankenkasse. F. Schilling.
79 (No. 19.) *Infektiöse idiopathische Purpura. O. P. Gerber.
80 Interessante Fälle von Abdominal-Erkrankungen. F. Burger.
81 (No. 20.) *Ueber Epityphlitis. W. N. Clemm.
82 *Die Gallensteinkrankheit und ihre Behandlung (biliary lithiasis). G. Singer.
83 (No. 21.) Ueber die Einfluss der Gravidität auf die Schleimhaut des Uterus (influence on mucosa). B. Müller.
84 (No. 22.) Familiäre Enuresis nocturna. R. Stern.
85 (No. 23.) Die Amöben und die Amöbenruhr (dysentery). E. Bertarelli.
86 *Roentgen Examination of Stomach.—Die radiologische Untersuchung des Magens. G. Holzknecht and L. Brauner. (Commenced in No. 16.)
87 Beiträge zur Kenntnis der herzegowinischen Volksmedizin (medical folklore). K. Steiner. (Commenced in No. 20).

75. **Mixed Infection in Tuberculosis.**—Pick believes that mixed infection is very frequently the reason why a latent phthisis suddenly assumes a rapid, galloping form. It promotes destructive processes in the lungs, especially cavity formation, which is mainly the work of streptococci. The metabolic products resulting from mixed infection are liable also to injure the organism. The prognosis of mixed infection, therefore, differs from that of pure tuberculosis. In case of high fever, tuberculin treatment can do little, if any, good. In general treatment measures against the mixed infection are necessary, and he has seen good results from creosote and also from the salicylates in the febrile cases. When the strength permits, hydrotherapy can be used to advantage, especially packs. In case of tuberculosis of the serous membranes he states that he has derived benefit from rubbing green soap into the skin of the abdomen or breast.

79. **Infectious Idiopathic Purpura.**—Gerber reports two cases, one terminating fatally. They occurred with a brief interval in two inmates of the same house.

81. **Appendicitis.**—Clemm regards the appendix as a necessary reservoir for the intestinal bacteria, and hence does not favor its removal without great cause. He agrees with Robin that fully 98 per cent. of the cases of appendicitis terminate in recovery without appendicectomy. In treatment he advises rest on a hard mattress, with applications of heat to the part to soothe the inflammation and to help move the bowels. A hot sand bag or thermophore is placed under the part and a hot, soft linseed poultice is placed over it or a light thermophore. The patient is coaxed to take frequent swallows of hot Carlsbad water or physiologic salt solution, as hot as possible. No opium, purgatives or ice are used. After several hours the hot applications are suspended and a tablespoonful of green soap is worked into the skin, after which an alcohol compress is applied. No food is allowed for two days. Rapid recovery is the rule under this treatment in recent cases. The physician should continue his oversight of the case, with massage of the parts with his own hands, for weeks, and surveillance of the stools, supplemented by an adhesive-plaster supporting bandage and later a good truss, strengthening the muscles by appropriate exercise. Treatment on these principles will rob this dreaded disease of all its terrors, he affirms.

82. **Treatment of Cholelithiasis.**—Singer has been remarkably pleased with the results of olive oil in treatment of gallstones. In one of his cases a woman passed 52 gallstones, some as large as a cherry, under treatment with pure olive oil. He begins with one and increases to four or five tablespoonfuls a day, taken fasting, and followed by a small glass of warm Carlsbad water. Some patients overcome a repugnance to the taste by rinsing the mouth before and after with brandy or some alcoholic aromatic mixture. The oil can also be given in the form of a flavored emulsion. He sometimes uses an alkaline oleate in place of the oil, but has never had such success with it as with the olive oil. He generally advises gallstone patients to eat abundance of butter.

86. **Roentgen Examination of the Stomach.**—Holzknecht and Brauner add twenty-nine illustrations to their article emphasizing the value of the information that can be derived from Roentgen examination of the stomach after ingestion of a solution of bismuth. The fluid settles in the cracks and around the outside of a tumor and thus throws it into relief in the skiagram. The bismuth also outlines the stomach as the patient assumes various positions. No bougie or stomach tube is required. The views are taken standing and reclining, and during inspiration and expiration, the most important information being generally obtained by radioscopy. The findings are characteristic for the fasting stomach, and also for the stomach weighed down by a meal containing 500 gm. of food or inflated with gas. The size of the stomach and its relations to other organs can thus be accurately determined. The passage of a bismuth tablet into the stomach can be traced and its expulsion watched. The action of massage on the stomach can also be studied in this way, and the displacement of the organ during respiration. The diagnosis of cancer or hour-glass stomach is an easy matter by this means, and it also allows undisturbed supervision of the stomach peristalsis. To examine the standing patient the Roentgen tube and the fluorescent screen are suspended by weights from a wooden standard, parallel to each other. The patient swallows a tablet of bismuth and, after its course has been traced, drinks 50 gm. of water into which 10 gm. of bismuth have been stirred. After the findings of this test have been noted he drinks a mixture of 4 gm. tartaric acid and 5 gm. sodium bicarbonate. This stirs up the bismuth in the stomach and gives very interesting findings, after which the patient reclines and the findings in various positions are noted. The test on the following day consists of ingestion of 400 gm. of milk gruel containing 35 gm. bismuth. The patient takes this while reclining on the left side, with the Roentgen tube at his back, and he is then examined when lying on the right side and on his back. Specimens of the views thus obtained are reproduced.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed XLIV, page 1890.

88 (LVII. Nos. 1-2.) *Ueber den osmotischen Druck menschlicher Mageninhalte und seine Beziehung zum Kochsalzgehalte (osmotic pressure of stomach content). H. Strauss.
89 *Mischinfektion des Blutes mit Proteusbazillen und Streptokokken, zugleich ein Beitrag zur Frage der Mitagglutina-

tion von Typhusbazillen bei Proteusinfektion. G. Jochmann.
90 *Studien über Nephritis. F. Erben.
91 Duplicated and Accessory Heart Sounds on Direct Auscultation of Heart.—Ueber die verdoppelten und akzessorischen Herztöne bei unmittelbarer Auskultation des Herzens. W. P. Obrastzow.
92 *Ueber die spinale Lokalisation der motorischen Funktionen. P. Lazarus.
93 *Tierexperimentelle Studien über Blutdruckmessungen mittels des Riva-Rocci 'schen Sphygmomanometers. B. Feliner and C. Rüdinger.
94 *Ueber die Bedeutung der anorganischen Salze im Stoffwechsel des Organismus. A. Hirschler and P. Terray.
95 *Ueber den Einfluss von Alkalien auf den Säuregrad des Harnes bei Anämien (alkalies and acidity of urine). S. v. Moraczewski.

88. **Osmotic Tension of Stomach Content and Its Relation to the Proportion of Salt.**—Strauss has been studying this subject for five years. The proportion of salt in the stomach content was found generally no higher than that of the blood. The secretory behavior of the stomach is of great import in respect to the proportion of chlorin in the stomach content, as it determines the amount of dilution of the solution isotonic with the blood. In case of defective secretory functioning there is little or no dilution, and hence the proportion of chlorin is abnormally high. In hyperacidity the secretion may be watery or concentrated. Admixture of saliva probably cooperates in causing the stomach content to be isotonic with the blood, but it can not be the sole cause.

89. **Agglutination of Typhoid Bacilli in Proteus Infection.**—Jochmann describes a case of otogenic general sepsis in which streptococci and proteus bacilli were cultivated from the blood. The serum had marked agglutinating action on typhoid bacilli as well as on the proteus.

90. **Studies on Nephritis.**—In this second installment Erben gives the details of chemical and other researches on the blood serum in 8 cases of contracted kidney and analyzes previous literature on the subject. He states that in parenchymatous nephritis, the proportion of globulin to albumin in the blood alters in favor of the former. The existing amyloidosis in some cases does not seem to change the quite constant composition of the red corpuscles, but it alters the composition of the serum and the relations between the corpuscles and the plasma. The increase in the extractive substances is due to the uremia.

92. **Spinal Localization of Motor Functions.**—Lazarus presents an array of data to prove that each anterior spinal root is a spinal center for certain combined muscle functions, several muscles working in synergy. These motor centers in the spine are localized the same as the centers in the cortex. Among the facts which he cites is the persistence of co-ordinated respiratory movements in animals after removal of the brain. He gives the localization by segments of the various motor functions in question, movements of head, neck, shoulder, trunk, etc., and the corresponding muscle groups and their centers in the spinal segments.

93. **Comparative Tests of Blood Pressure Measurements.**—The findings with the Hürthle tonograph and other instruments compared with those of the Riva-Rocci sphygmomanometer always paralleled each other in respect to the pulse pressure, that is, the difference between the minimum and maximum blood pressure, and the blood pressure quotient was found almost identical with each instrument. The sphygmomanometer is thus able to substitute the more complicated processes of determining the blood pressure in animals with a cannula.

94. **Importance of Inorganic Salts in Metabolism.**—Dogs were fed on a determined diet and the elimination of the waste carefully studied. The results indicate that it makes a great difference in what form the inorganic salts are ingested in respect to their assimilation. When phosphorus is given in the form of yolk of egg, the nitrogenous elements of the body make more rapid growth than when it is given in any other form. The yolk probably owes this property to its lecithin. This exhaustive research, therefore, scientifically confirms the general opinion in regard to the nourishig properties of yolks of eggs, and their early adaptability for the diet of children. A case of chronic deforming endocarditis was also studied from the point of view of the metabolism on various diets. The extensive work was done under a grant for scientific research, and presents a résumé of previous work in this line by various authors.

95. **Influence of Alkalies on Degree of Acidity of Urine in Anemia.**—Sodium citrate and sodium bicarbonate are able to render the urine alkaline in anemia. In some instances, however, especially in cases in which there is enlargement of the liver, this alkalinizing action is retarded for several days. On suspension of the alkali the urine becomes excessively acid, with increased secretion of ammonia and oxalic acid. Anemias without enlargement of the liver are accompanied by normal relations between the nitrogenized elements.

Riforma Medica, Palermo and Naples.

Last indexed page 363.

96 (XXI, No. 22.) Hydrocarbonate Metabolism.—Sul ricambio degli idrati di carbonio. L. Ferrannini.
97 *Protecting Functions of Omentum.—Nuove ricerche sulla funzione protettiva dell' epiploon. E. Cioffi.
98 (No. 23.) Note di semeiotica fisica relative alla presenza contemporanea di gas e di liquido nella pleura. G. Boeri.
99 *Intravenous Route for Drugs Acting on the Medulla.—La via endovenosa per i farmaci ad azione bulbare (caffeina, strichnina). L. Ferrannini.
100 (No. 24.) Nevrite ascendente da pneumococco del Fränkel. D. Pirrone.
101 *Studii sulle leucemie e pseudoleucemie. F. Schupfer. (Commenced in No. 22.)
102 Bilharzia Eggs in Feces.—La ricerca delle uova di Bilarzia nelle urine e nelle feci. T. Mazzei.

97. **Protecting Functions of Omentum.**—The protecting action of the omentum has been demonstrated by Cioffi's researches, not only for the spleen and kidney, but also for the liver, suprarenal capsules and intestines. If the vessels of the spleen are tied off and the omentum removed, the animal dies in twenty-four hours, while it survives longer if the omentum is left intact. If a flap of the liver is loosely tied off, the omentum covers and clings to it, with the result that a protecting capsule forms, with congregation of leucocytes and especially phagocytes. During this period of absorption of liver, spleen or other tissue, the kidney behaves in the same way as if organic nucleoproteids were being injected, that is, the secretory apparatus shows changes and there is parenchymatous hemorrhage. The protecting action of the omentum is promptest and most marked in case of lesions of the intestine.

99. **Intravenous Route for Caffein and Strychnin.**—Ferrannini's experimental researches have demonstrated that the drugs acting on the medulla can be administered intravenously in case of emergency.

101. **Research on Leukemia and Pseudoleukemia.**—Schupfer's article issues from Baccelli's clinic at Rome. He is convinced that leukemia has no analogy with ordinary infectious diseases, but is more in the nature of a systematic sarcomatosis of the lymph and blood producing organs. To demolish completely the idea that leukemia can be due to any ordinary micro-organisms and that they circulate in the blood, he injected cancer patients with blood from some patients with leukemia. The possible beneficial effect of an intercurrent infection justified the attempt, but the results were entirely negative, as they were in similar experiments on animals. These results, he thinks, disprove the possibility of an ordinary infectious agent, as cancer patients are peculiarly susceptible to mixed infections. Further experiments with inoculation of leukemic tissue, he thinks, have fully confirmed the assumption that leukemia is a sarcomatosis.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

SANITARY REPORTS FOR MEXICO for the years 1901 to 1904, inclusive. Paper. City of Mexico.

AMERIKANISCHE STREIFLICHTER von Carl Beck. Cloth. Pp. 246. Berlin, SW., 48: Verlag von Leonhard Simon NF..1905.

TWENTY-EIGHTH ANNUAL REPORT OF THE BOARD OF HEALTH of the State of New Jersey and Report of the Bureau of Vital Statistics 1904. Cloth. Pp. 494. Paterson, N. J.: News Printing Co., 1905.

THERAPEUTICS, Its Principles and Practice. H. C. Wood, M.D., LL.D. Twelfth edition. Thoroughly Revised and Adapted to the Eighth (1905) Edition of the United States Pharmacopeia. H. C. Wood and H. C. Wood, Jr., M.D. Cloth. Pp. 907. Price $5.00 net. Philadelphia: J. B. Lippincott Co., 1905.

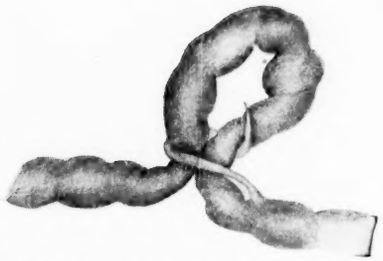


Fig. 1.—Diverticulum wrapped around gut, producing obstruction —Cazin—Rep. by Halstead, Annals Surg., vol. xxxv, p. 471.

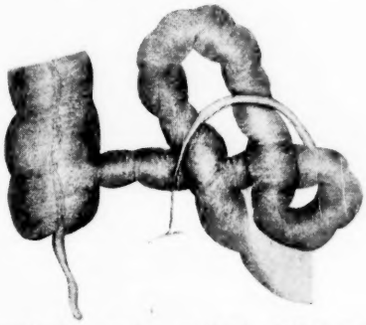


Fig. 2.—Diverticulum acting as band. Distal end adherent to posterior abdominal wall. Loop of gut incarcerated.

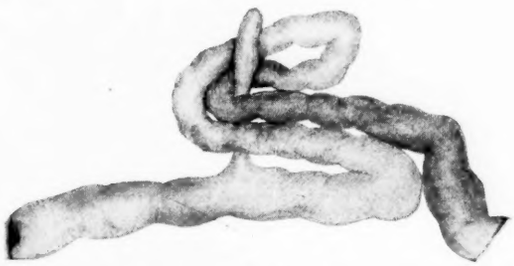


Fig. 3.—Diverticulum surrounded by adherent gut producing obstruction. (Tyffany—Personal communication.)

Fig. 4.—Diverticulum sole content of hernial sac, Benevolis case, Rep. by Bunts, Annals Surg., October, 1904.

Fig. 5.—Diverticulum and intestine in hernia. Several cases (similar) reported.

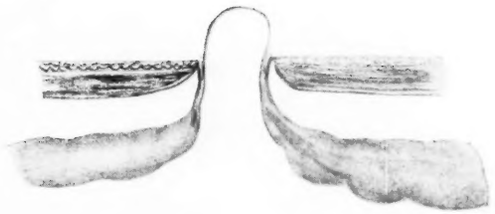


Fig. 6.—Diverticulum patent at umbilicus with protrusion of posterior wall of gut.

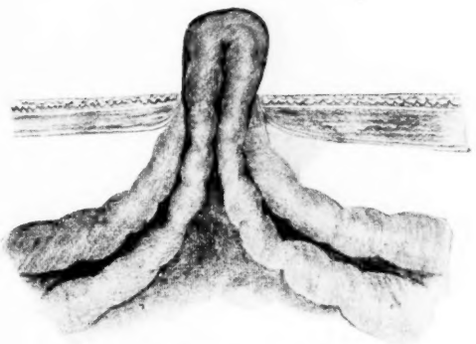


Fig. 7.—Same as Fig. 6, with hernia.

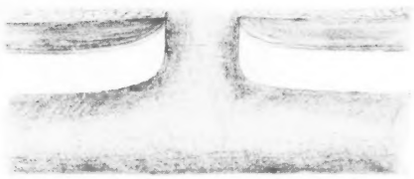


Fig. 8.—Large diverticulum patulous at umbilicus.

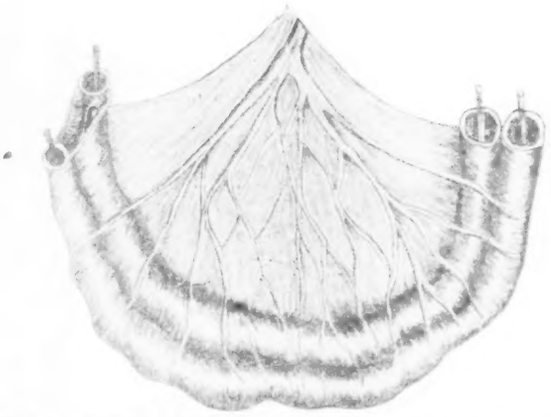


Fig. 9.—Stedman case (Warren Museum): Fitz. Am. Jour. Med. Sci., July, 1884. Symptoms of bowel obstruction for 4 or 5 days.

Fig. 10.—Obstruction by traction. Angulation at mesenteric attachment. Diverticulum attached to mesentery. Boyer's case, personal letter.

Fig. 11.—Obstruction by traction. Angulation at attachment of diverticulum.

Fig. 12.—Diverticulum with cyst. Weight of cyst producing strangulation and obstruction of bowel. (Mayer and Lee, Am. Jour. Med. Sci., March, 1905.)

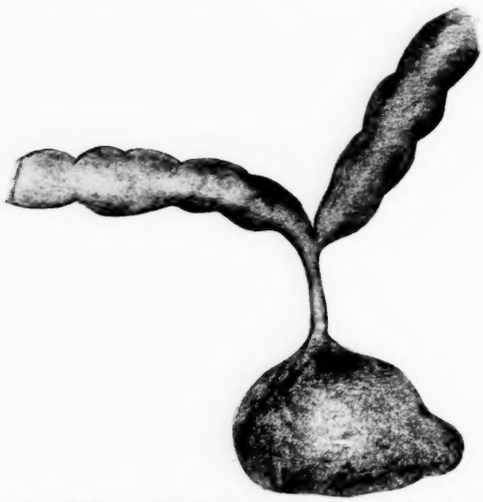


Fig. 13.—Cyst of diverticulum producing obstruction by traction. Walzberge's case (Halstead).

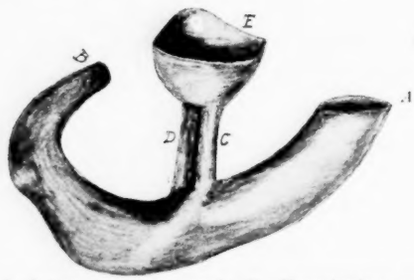


Fig. 14.—A, Upper part of bowel; B, diverticulum pulled out; C, narrow tube connecting upper and lower part of bowel; D, mesentery; E, lower part of bowel.

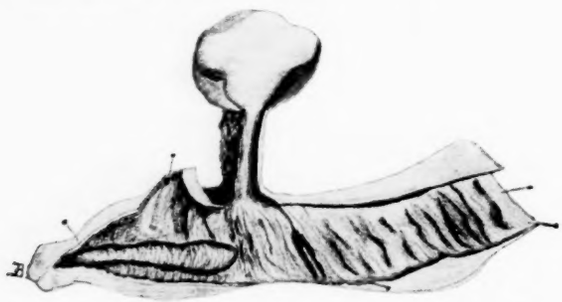


Fig. 15.—Cheyne's case, Annals Surgery, December, 1904. B, diverticulum inverted.

Fig. 16.—Invagination of diverticulum, Heller's case, Rep. by Watson Cheyne, Annals Surg., Dec., 1904.

Fig. 17.—Invagination of diverticulum dragging bowel after it. Author's case.

Fig. 18.—Invagination of bowel. Diverticulum dragged in, but not inverted (Stubenrauch's case, Rep. by Halstead, Annals Surg., vol. xxxv, p. 489.)

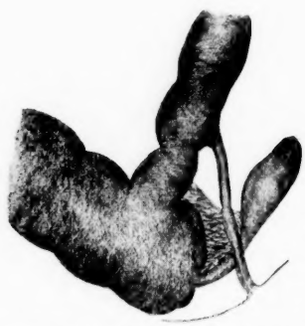


Fig. 19.—Appendix strangulated by diverticulum acting as band. McArthur's case (Halstead).

Fig. 20.—Author's case, seen after this paper was written. Causing no trouble. Obstruction due to adhesions. Post appendiceal.

Fig. 21.—Author's case, seen in gunshot wound of bowel, walls of diverticulum very thin.